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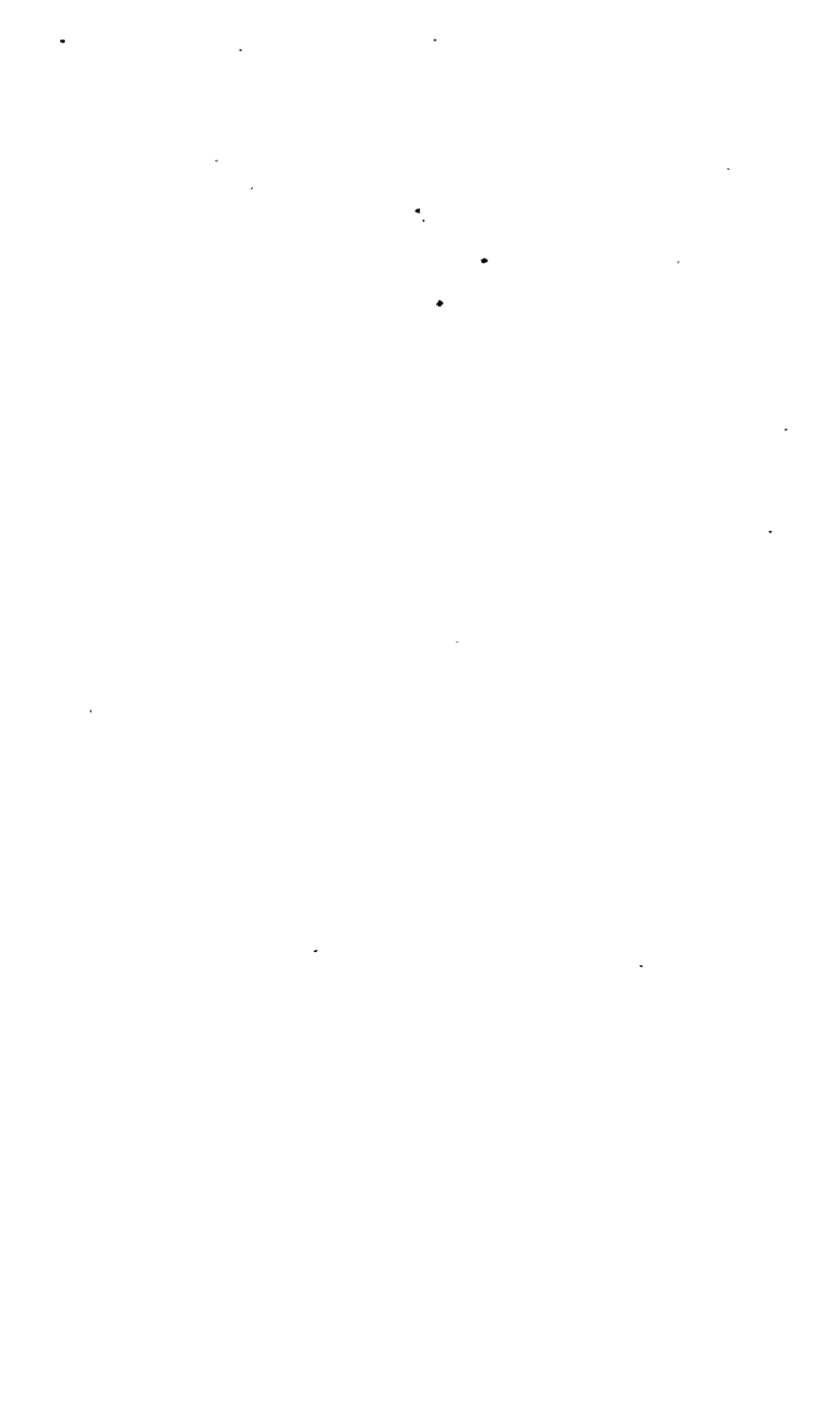
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OF
GREAT BRITAIN AND IRELAND.



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ERRATA IN VOL. III.

P. 331 line 11 from bottom, *for* "Norman" *read* "Roman".

„ 335 „ 10 „ „ „ "Ethnical" „ "Ethical".

NOTICE.—The Publication of Plates i, xi, and xii, is
unavoidably postponed.

THE JOURNAL
OF THE
ANTHROPOLOGICAL INSTITUTE
OF
GREAT BRITAIN AND IRELAND.

FEBRUARY 4TH, 1873.

Colonel A. LANE FOX, V.P., *in the Chair*.

THE Minutes of the last Meeting were read and confirmed.

JOHN STRUTHERS, M.D., Professor of Anatomy in the University of Aberdeen, was elected a member.

The following presents were announced, and the thanks of the meeting voted to the respective donors:—

FOR THE LIBRARY.

- From the EDITOR.—The Food Journal, for January, 1873.
- From the EDITOR.—Zeitschrift für Ethnologie, Berlin, 1872.
- From the SOCIETY.—Bulletin de la Société Impériale des Naturalistes de Moscow.
- From the SOCIETY.—Proceedings of the Royal Society, vol. 21, No. 140.
- From the AUTHOR.—On Australian Kinship. By Lewis H. Morgan.
- From the EDITOR.—La Revue Scientifique, Nos. 28, 29, and 30, 1873.
- From the ASSOCIATION.—Journal of the East India Association, vol. 6, No. 3.
- From the EDITOR.—Bulletin de l'Athénée Oriental, Nos. 13, 19, 1869.
- From Prof. A. ECKER.—Archiv für Anthropologie, Band v, heft iv, 1872.
- From the INSTITUTION.—Journal of the Royal United Service Institution, No. 68, 1873.
- From the INSTITUTE.—The Canadian Journal, vol. 13, No. 5, 1872.
- From the SOCIETY.—Bulletin de la Société d'Anthropologie de Paris, tom. 6, fas. 4; tom. 7, fas. 1. 2. 3.

From the SOCIETY.—Proceedings of the Society of Antiquaries of London, vol. 5, No. 4.

From the EDITOR.—Nature (to date).

FOR THE MUSEUM.

From Prof. STRUTHERS.—Skull of a Chinese individual; skull from Aberdeen.

From Rev. WALTER GREGOR.—Skull from a kist in Banffshire.

Two skulls, one being that of a Chinese individual, the gift of Professor Struthers, were exhibited.

A skull from a kist in Banffshire was also exhibited, by the Rev. Walter Gregor.

The Chairman exhibited, on behalf of Captain Edge, R.N., an idol from Nicobar.

The following paper was read by the author :

The INHABITANTS of CAR NICOBAR. By W. L. DISTANT, M.A.I.

THE following short account of some of the manners and customs of the inhabitants of Car Nicobar, is extracted from my journal kept during a visit to that island in the months of May and June 1868. A trip for the benefit of my health on board a trading brig from Penang, which remained at Car Nicobar for upwards of four weeks, afforded me some fair opportunities for observation. I had also the benefit of the captain's experience, the result of regular trading with this island for a series of some six or seven years.

Car Nicobar is the most northern of the Nicobar islands, and a description of its inhabitants will scarcely apply to the other islands of the group, which were little visited at the time of my journey, and whose inhabitants were reported to be of a more ferocious and less trustworthy character. The inhabitants of Car Nicobar are a tall and muscular race, larger in stature than the average Malay, and darker also in the colour of the skin; hair long and straight, worn generally to about the shoulders, except when mourning for the dead, when the head is closely shaven. The countenances of the men have usually good-humoured expressions, with dark, restless, observing eyes, always watchful, and quick to catch any characteristic or peculiarity. Their memories are particularly retentive, and they readily acquire a sufficient knowledge of the different languages spoken by the various traders who visit the island. Disease seems very rare among them. During the time I remained there, I only observed one case of paralysis, which had deprived a man of

the use of his right side, and a few cases of common ailments incidental to children. They make great use of the big toe as an opposable thumb, rarely bending to pick up any small thing with the hand from the ground.

The dress of the men is of the most primitive description; usually a string round the waist, supporting a narrow strip of cloth passed between the legs. But the chiefs, or head men, before strangers, adopt a more extensive apparel, according to the extent of their possessions in old clothes which they may have received in barter from the European traders. The regular London high-crowned hat is in particular demand, and a fortunate possessor of one of these may be seen strutting about with great self-complacency, though the remainder of his apparel may often consist of nothing but the string and cloth aforesaid. The hat is also found useful for carrying the different testimonials he may have received from the captains of other vessels. The dress of the women consists of a long piece of cloth, wound round the body, fastened at the breast, and extending below the knees. Trinkets ornament the nose; they perforate the lobe of the ear in a large and hideous manner (a custom also of the men), coils of brass or steel wire are worn above the ankle, or as bracelets for the wrist. Blue seems the favourite colour in the dress of the women; fancy colours, in which red predominates, are in greatest demand for the somewhat scanty attire of the men.

Their houses are in the form of a cone or bee-hive, supported on piles, so that the tallest man can walk underneath. The roof is neatly thatched; the sides are composed of bamboos, thickly and regularly laced together. Access is obtained by a bamboo ladder, which is usually pulled up at night. These houses are generally in groups of from ten to twelve in number, thus forming a succession of small villages (if they may be called so), and each has its head man, who seems to be invested with a certain amount of governing power.

At the invitation of a head man I paid a visit to one of these houses. Following my guide, and climbing the bamboo ladder, I entered a circular apartment, incidental to the structure of the dwelling. The floor was composed of laths of split bamboo, the apertures between which, allowed a delicious current of air to permeate the room. There was a fire made on a basket of sand, and a general air of cleanliness and neatness was most observable. As the guest, I was conducted to a very fair specimen of an arm-chair, evidently constructed from observations made of one of those articles on board some vessel. From the centre of the roof were suspended the wooden effigies of a man and woman in an arbour, obtained, I presume, from some vessel, which, my host dogmatically informed me, were the representations of the

first man and woman. I was pestered with inquiries of the outside world, particularly as to Queen Victoria ;—what sort of a house that august lady resided in, and as to how many sepoys she had in her dominion. A woman was suckling an infant, whilst two small boys, apparently from ten to twelve years of age, were each nursing another baby. It seems a custom among these people, that so soon as a child is physically capable, its duty shall at once be considered to carry a smaller one about, and the number of these nurses with their charges that one meets with, is rather considerable. The children are not carried as in England, but astride the left hip, as is usual in the East. Most of these people seem to possess two habitations, one near the sea, the other some little distance inland.

Their religion, from outward protestation or observance, seems very little. They believe in a good and in an evil spirit. The latter they invest with a personality, and seem to fear the most. They believe he resides in the woody interior of the island, but consider he is only to be feared if they are dishonest, untruthful, take more than one wife, or injure their neighbours. I was informed by the captain with whom I was passenger, that at certain times each village is supposed to be visited by his Satanic majesty, and that at those times a general exodus of the inhabitants takes place. A large lizard is regarded with superstition, as, on my endeavouring to shoot one, I was told that I should bring disease and trouble upon myself if I succeeded. They are very honest. On the arrival of a trading vessel, they at once swarm on board, select the various articles they require, and take them away with them, stipulating to pay a certain number of cocoa-nuts, deliverable on the beach by a certain day (each man possessing a certain number of trees), which obligations are always faithfully fulfilled. Articles were actually bartered by the captain I was with, for cocoa-nuts to be delivered on his return in about three months' time. I was informed that murder, quarrelling and robbery, were quite unknown among them. They have but one wife, and look upon in chastity as a very deadly sin. In fact, though harmless and friendly, the slightest disrespect to their women would probably be visited by murderous consequences. The head men are in the habit of saving a certain amount of money to enable them to visit the nearer ports, such as Madras, Rangoon, Calcutta, etc., and during their stay in those places, their chastity has been closely scrutinised, on account of certain astonishment being felt for the same.

There is not much movement on the shore in the early morn, and I was informed that early rising is a thing almost unknown among them. Their principal occupation is gathering and con-

veying the cocoa-nuts they barter with the trading vessels. Work seems equally divided irrespective of sex. Men and boys climb the trees and cut down the nuts. As they fall the women gather them and tie them in pairs by tearing up strips of the bark and twisting two together. These are then slung across a bamboo, and more men, women and boys, carry them to the beach. They have a correct knowledge of numbers, the cocoa-nuts always being bargained for in hundreds, and the quantities are found strictly correct. They calculate their time by moons, and at one season of the year have a grand feast. I was informed by the captain, who had seen one of these bouts, that when the men are in a state of intoxication they fight with large pigs. The animals are made nearly mad, and the combat commences. A man waits for the rush of the pig, seizes it by the ears and throws it. That the men do not always escape, I proved by observing a large scar on the leg of one of these men, and on asking him the cause, he informed me it was the effect of one of these orgies.

Their canoes are fashioned out of one solid piece, but are not made on the island, being obtained from a neighbouring island of the group, and purchased with spoons and other commodities obtained from the trading vessels. Expeditions are also made from Car Nicobar to the other islands, and considerable loss of life by shipwreck frequently takes place.

The principal articles used by the traders in exchange for cocoa-nuts, are guns and ammunition, cutlasses, tobacco, cloth, rum, plated goods, etc. The cutlasses they use for cutting down the nuts, and the guns for shooting small birds. They do not hold the stock of the gun to the shoulder, but keep the weapon at arm's length. They are remarkably good shots. They use the rum to intoxication and as a change from the toddy they make from the fermented milk of the cocoa-nut. Plated goods, such as spoons and soup-ladles, they hang in their dwellings as ornaments.

They are fond of changing names with the visitors to the island, and some of their cognomens are rather extraordinary, not only the "Blue Book", but also the "Newgate Calendar", having seemingly been searched for names of distinction for them by facetious visitors. They are changeable in their requirements; a particular commodity that they bought freely and chiefly one time, would, the captain informed me, be scarcely looked at when he next arrived in three months' time.

Pigs and fish, which they usually take by spearing, form the staple of their food; yams are also plentiful, and are largely used. They seem to believe in the efficacy of snakes and beetles as cure for disease, for on my frequently offering rewards for

those objects, I would generally be asked, "What matter with you, Distant?" They have a peculiar method of treatment for illness. Coils of bright steel wire (brought by the Kling traders), are wound round the arms, fingers and toes. One unfortunate infant I observed with its limbs literally encased with this article. They have also acquired a slight acquaintance with modern medicine, such as quinine, Epsom salts, and castor oil; the latter being in considerable request. Scent is also purchased at almost any price, one man telling me it made him smell nice, and made his wife pleased with him.

The mad are put to death, being garotted with two pieces of bamboo; this, however, is seldom necessary, and is the only cause for a death penalty that I could discover.

There is a graveyard attached to each village, generally near the centre of the same. The dead are wrapped in cloths and buried, a post being placed at the head of the grave, with certain distinctive marks upon it. I was informed that after the space of some three years, the bones are publicly exhumed, taken out to sea, and scattered to the four winds. They seem to bear affectionate remembrance of their dead.

Though acutely observant, they seldom allow expressions of astonishment to escape them. This was particularly noticeable in two Nicobar youths we carried with us to Rangoon and Penang. In harbour they would jump overboard, and swim long distances to other vessels, on board which they would clamber, to the no small astonishment of the crews. They would make their way all over these strange vessels, even inspecting the cabin to satisfy their curiosity, exhibiting no fear, asking no permission, and to an extent ignoring the presence of the crews. At Penang, we once took them on an evening visit to some friends. A short time after our arrival, shrieks proclaimed the advent of one of our Nicobar friends in the sleeping apartment of a lady, where he had strayed in his inspection of the house. Search being made for the other, he was discovered alone and asleep on the drawing-room sofa. These people are peculiarly sensitive, and cannot be treated as servants or inferiors.

In conclusion, I can only say I have endeavoured to lay before the Institute such facts as came under my own observation, or could be gleaned from information at the island. I regret that I took no exact measurements as to height, etc., and was unable to procure any skulls.

DISCUSSION.

Mr. CONWAY begged to ask Mr. Distant, if the good and the evil powers worshipped were equally important, or whether the good was faintly thought of; and whether the worship seemed inspired by any other feeling than simple fear.

Mr. DISTANT, in reply to various questions, said their canoes are outrigged, and the fish-spear and paddle are not combined, each instrument being quite distinct from the other. Indolence is a very strongly marked characteristic of these people. Their habit of not holding the stock of the gun to the shoulder, but firing the weapon held at arm's length, must simply show a strength of wrist to counteract the force of the recoil. They never, however, attempt to shoot a bird on the wing. They seem to have only a slight idea of a Good Spirit, but to believe strongly in an evil spirit. Hence their religion (such little as it is) is one of fear. They usually carry a disc in the lobe of the ear.

Mr. CHARLESWORTH and Mr. PARK HARRISON also offered a few remarks.

The Director read the following paper :

Some ACCOUNT of the WARS of EXTIRPATION, and HABITS of the NATIVE TRIBES of TASMANIA. By J. E. CALDER, Esq., of Hobart Town.

THE most interesting event in the history of Tasmania, after its discovery, seems to be the extinction of its ancient inhabitants ; and as the causes that have led thereto have been only imperfectly told, I purpose throwing a little more light on the subject than has, as yet, been made public, which I derive from authentic official documents—not generally perused by writers on the colonies—that I have had the rare advantage of studying, and which contain, also, copious accounts of their wars on the whites, and some information about their habits.

It is believed that they were never a numerous people, and at no period since the colonisation of the country, in 1803, do they seem to have exceeded seven thousand—which may be safely taken as an outside estimate of their numbers. One individual of the race is now its only living representative, a very old woman, known amongst the colonists by the name of Lalla, but whose native name is Truganini.

The gradual decrease, leading to the final extinction of the ancient inhabitants of Tasmania which is now so very nearly accomplished, is assignable to very different causes than the hostility of the whites, to which it has been so much the fashion to ascribe it ; for, up to the time of their voluntary surrender to the local Government, they not only maintained their ground everywhere (the towns excepted), but had by far the best of the fight. Tribal dissensions, causing mutual destruction (for such were their jealousies and hatreds, that they fought one another all the time they were thrashing the whites), contributed to their decrease in some degree, and the justly provoked hostility of

the settlers aided the progress of their decay, but only in a minor way; for, beyond all doubt, they were no match for the blacks in bush-fighting, either in defensive or offensive operations.

The settler and his homestead were generally, but not always, successfully surprised by his subtle enemy; and in pursuit (if the savage were beaten off), the less active European stood about the same chance of coming up with him, as the slow hound would have in a deer chase; and as far as I can learn from attentive perusal of the massive correspondence on the subject of the long quarrel between the two races, that is deposited in the office of the Colonial Secretary, filling seventeen large volumes of manuscript papers, aggressiveness was almost always on the side of the blacks; and in this unequal contest the musket of the Englishman was far less deadly than the spear of the savage, at least five of the former dying for one of the latter. Thus, in the first and largest volume of the series above spoken of, which treats solely of these encounters, we learn that in the five years preceding the close of 1831, ninety-nine inquests were held on such of the white people, whose bodies could be found after death, against nineteen blacks, killed in these farm fights; and it is further recorded, that in the same period sixty-nine Europeans were wounded against one, or at most two, of the other race; some of the latter were also taken. Of the natives who fell, only one was murdered. That many others on both sides, whose deaths are unreported, were killed in the same period, is very certain; and it is equally certain, or at least highly probable, that in these unrecorded encounters, our countrymen got the worst of it, as they generally did. The number of inquests actually held, must have been much greater than stated, as the coroners of three principal districts were unable to furnish the returns required by the Government, doubtless from the defective state of their office records, to say nothing of the operations of certain bands of whites, called "roving parties," one of which, at least, did kill several of them.

If it had been possible to bring the savage into fair and open fight, with something like equal numbers, all this would have been reversed, of course. But the black assailant was far too acute and crafty an enemy to be betrayed into this style of contest, and never fought till he knew he had his opponents at a disadvantage to themselves. He waited and watched for his opportunity for hours, and often for days, for he knew nothing of the value of time, and when the proper moment arrived, he attacked the solitary hut of the stock-keeper, or the hapless traveller whom he met in the bush, with irresistible numbers,

taking life generally singly, but often; the largest number that I read of his destroying on any one occasion being four persons.

In these assaults on the dwellings of his enemy he contrived his attacks so cleverly as to insure success at least five times in six, and if forced to abandon his enterprise, his retreat, with few exceptions, was a bloodless one.

The natives so managed their advance on the point of attack as not to be seen until they were almost close to the dwelling of their victim. They distinguished between a house and a hut, and seldom approached the former, for they quite understood that there was some difference between the most imprudent stock-keeper, and his more thoughtful employer. They had several instances of this, and profited by their experience. There was no want of pluck in the former, but a great absence of vigilance; and until these barbarians were reduced to a mere remnant by disease and strife, they never attacked except in parties of twenty, fifty, a hundred, or even greater numbers.

Their mode of assaulting a dwelling when there were several inmates at home, which they knew by previous watching, was to divide into small gangs of five, ten, or more, each concealing itself as effectually as the clansmen of Roderick Dhu, their approach being so quiet as to create no suspicion of their presence, to which the woody and uneven nature of the country is eminently favourable. Then one of these parties, which was prepared for instant retreat, made its presence known, either by setting fire to some shed or brush fence, or by sending a flight of spears in at the window, shouting their well-known war-whoop at the same time. This never failed of bringing out the occupants, who, seeing the authors of the outrage, now at a safe distance, but in an attitude of defiance, incautiously pursued them; and no experience of the artifices of the savage ever taught the assailed a lesson not to continue this insane practice. The blacks then retreated just as quickly as the others advanced, keeping out of gunshot, and defying them, generally in good English, to come on; for it was always found that some of nearly every tribe spoke our language well, as will be presently explained. Having decoyed their pursuers to a safe distance into the woods, and generally with rising ground between them and the hut, the others sprang from their cover, and rushing into the place, plundered it of its contents, often finishing their work by burning it to its foundations; first, however, killing, or leaving for dead, any unfortunate persons—mostly a mother and her children—who chanced to be left behind. They then fled with their booty, reuniting with the decoy party at some distant point.

In their first systematised assaults, which seem to have commenced about 1824, or a little earlier, their principal object was murder ; but in later times, plunder was the chief motive of the savage in attacking the white ; and murder, which was often superadded, was only a secondary idea. They took everything that was useful, and often what was of no use at all to them ; and more than once afterwards when their encampments were surprised, perhaps fifty miles from any settlement, when instant flight was necessary, they left articles behind that they could not even have known the nature of, such, for example, as clocks, work-boxes, etc., of which there are still extant some curious inventories.

But provisions of all sorts, and, above all, blankets, firearms and ammunition, were the articles they prized most ; of which latter they eventually surrendered many stand to the Government—pistols, muskets, fowling-pieces, powder and ball, all perfectly clean and dry, and in excellent order. Of these latter it was found that they knew not only the use, but were also practised in using them ; but there is no instance of their bringing them into the field, though they afterwards assured their principal captor and future “protector,” Mr. George Augustus Robinson, that they meant to have done so, but to the last they seem to have preferred their own arms in both fight and chase—namely, the spear and waddy.

Of firearms they had learned the use from both men and women of their own race, who, having been taken in early infancy by the settlers, were brought up in their own families, mostly as their own children ; but they invariably left them when they grew up, and rejoined their own people just like wood-pigeons, whose natural instincts can never be repressed. To these flights the youths were generally induced by the girls of their own race, with whom alone they could intermarry, and who had, therefore, no difficulty in enticing them into the woods. The natural propensity of the domesticated black females to be with their own people, operated similarly on them, and they became the instructors, in mischief at least, of the wild natives, and strangely enough, were foremost in every aggression on the whites, by whom, with hardly an exception, they had been treated with unvarying kindness ; but they were probably thrust to the front by the others ; and, possessed, as the whole race was, of most excellent memories, they never lost the language of our country.

Women, too, who had been either forcibly removed from their tribes, or purchased of their husbands or fathers, by a lawless

tribes, and became the most hostile of the enemies of all who belonged to the race of their persecutors; and notwithstanding the ancient custom of the blacks, not to permit the women to take any part in active war, these individuals could not be restrained from joining in, and sometimes leading the attack. One of these persons, called the amazon by her captor Robinson, a woman of one of the East Coast tribes whose real name was Walyer or Taierenore, planned and executed nearly every outrage that was committed in the districts bordering on the north and north-western coast. In the days of their decay, she collected the poor remnants of several tribes into one hostile band, of whom she was the leader and chieftainess; and true to the natural instincts of the savage, avenged the many indignities she had suffered at the hands of a sealer, on every one she fell in with who bore his complexion, telling Robinson she would kill the whole race "as soon as she would crush a black snake."

The craft of the savage, and his uniform disposition to treachery in his early intercourse with the settlers, are very faithfully described in the report of the Aboriginal Committee, 19th March, 1830. This committee consisted of some of the best informed and most intelligent men of the colonies of New South Wales and Tasmania, of whom Archdeacon Broughton, the immediate superior of the church of both colonies, was chairman. From this report I will here make an extract:—

"It is manifestly shown that an intercourse with them on the part of insulated and unprotected individuals or families has never been perfectly secure. Although they might receive with apparent favour and confidence such persons as landed from time to time on various parts of the coast, or fell in with them in remote situations, yet no sooner was the store of presents exhausted, or the interview from other causes concluded, than there was a risk of the natives making an attack upon the very persons from whom they had the instant before been receiving kindness, and against whom they had, up to that moment, suffered no indication of hostility to betray itself. . . . It is within the knowledge of many members of the committee, and has been confirmed by other statements, that even at this period (they are speaking of the early times of the colony) there was, beyond all doubt, in the disposition of the aborigines a lurking spirit of cruelty and mischievous craft, as upon very many occasions, and even on their retirement from houses, where they had been kindly received and entertained, they have been known to put to death with the utmost wantonness and inhumanity stock and hut keepers whom they fell in with in retired stations, at a distance from population, and who there is every reason to believe had never given them the slightest provocation."

To put down such an enemy as the aboriginal of Tasmania, who, I have shown, was neither to be easily met with in fight, nor overtaken in pursuit, in both of which he so often proved himself the superior man, was obviously a most difficult task; and either his never-ceasing surprises of the settlers must be quietly borne with, or his race must be removed. For a long time the Government retaliated with idle proclamations only, published in the official *Gazette* with as much seriousness as if it really believed this captivating journal reached the hands of these barbarians, which were of course only so many contributions to the waste-paper basket of the colony. One of these silly advertisements defined the limits of the districts they were to live in, and directed them in mandatory terms never more to pass the lines described in this terrible order, which could not be conveyed to them, nor understood if it were. Abandoning at last this absurd mode of procedure, which lasted much too long, while the blacks were devastating the homes of the colonists, almost with impunity, Colonel Arthur took more active measures for the protection of the people, and equipped several "roving parties", as they were called, to beat up the natives' encampments, and if possible to convey to the enemy a message of peace: and as these parties were mostly accompanied by captive blacks, half tamed into subordination, partial intercourse with some of the tribes took place, and beyond doubt, it somehow became known to them that the wish of the Governor was to protect equally both races, for when Robinson afterwards got a footing amongst them, he not only found that they were well aware that the desire of the whites was for peace, but that the expiring tribes, who were then dying off almost as fast as they could lie down, were not unwilling to "come in," as he calls it, *i.e.*, to surrender. The dissemination of this desire, in whatever way it reached them, was the principal good done by the roving parties—that is, if it were effected by them, as it is said to have been; though considering what was the practical action of some of them, I should think they did more to increase than allay enmity, and it is more likely they heard it from the civilised youth of their own race, who so often eloped from the guardianship of the settler. But the tribes still remained as intractable as ever, until a man who spoke their own language, and was master of their various dialects (of which Robinson says there were six), went boldly amongst them, accompanied by ten or a dozen of their own countrymen, whom he had perfectly subdued to his will, and conciliated into affection for his person, and in about five years of most unrelenting exertion and toil, brought in the whole of them (except about four) who, to the great astonishment of everyone but himself, were found not to number

more than two hundred and fifty. The causes of this declension I shall explain in their proper place, taking Robinson for my authority. In his various reports he always maintained that this people was nothing but a remnant of the six or eight thousands who were living in 1804, and his reports of their strength he had from the most accurate sources, viz., the natives themselves (who though they had no words to express numbers higher than units, could repeat the names of the individuals of the tribes), and thus he learned their real force, which he never rated higher than seven hundred—that is, after 1830; and year after year his estimates decreased as they died out, and he then reports five hundred, and finally three hundred or four hundred, and when he got the last of them they had sunk to the numbers given above, that is, to about two hundred and fifty.

Without going into the general subject of the decay of this race in this place, I may venture a passing remark or two on the subject of their rapid and remarkable declension, which had been going on for some years before this time, as if the very plague had seized on them. Whole tribes (some of which Robinson mentions by name as being in existence fifteen or twenty years before he went amongst them, and which had probably never had a shot fired at them) had absolutely and entirely vanished. To the causes to which he attributes this strange wasting away, as coming under his own personal observation, I think infecundity, produced by the infidelity of the women to their husbands in the early times of the colony, may be safely added. This, I believe, was not a mere occasional, but very general failing amongst the women; and prostitution, all the world over, vitiates the powers of the females, wholly obstructing production. Robinson always enumerates the sexes of the individuals he took, and distinguishes between childhood, adolescence, and manhood; and, as a general thing, found scarcely any children amongst them, and quite reversely of the natural condition of our race, the adulthood was found to outweigh infancy everywhere in a remarkable degree. In the present instance his capture was found to consist of sixteen men, nine women and one child.

The well-known doctrine of Strezelecki that the savage woman, after contamination by the white, is invariably and for ever infertile, is only an amusing fiction, instances of the contrary having occurred, both in New South Wales and Tasmania, in cases where I presume the cohabitation was not a very protracted one. Nor can the decadence I have spoken of be traced to infanticide, at any rate of children of their own blood, of whom the mother was passionately fond; though it seems possible that the peculiar exigencies of their state may have sometimes produced a forced, but certainly most unwilling, abandonment

of them. Instances of infanticide did, indeed, come within Robinson's knowledge; but then the victims were half-castes, whom the savage woman both of Australia and Tasmania is known generally to have hated. In the cases in question a mother suffocated two of her offspring by thrusting grass into their mouths till they died. (Report, 13th May, 1831.) In concluding his account of this cruel tragedy, he says:—"The aboriginal females in the Straits do not entertain an equal degree of fondness for those children whom they have derived from Europeans. In confirmation of which several facts are on record." And he adds, in reference to these murders, "this circumstance is borne out by the united testimony of the aboriginal women of the establishment" (Swan Island).

Their rapid declension after the colony was founded is traceable, as far as our proofs allow us to judge, to the prevalence of epidemic disorders; which, though not introduced by the Europeans, were possibly accidentally increased by them. The naked savage soon discovered the comforts of covering, and such things as blankets and clothing were often given them by the settlers, or were distributed amongst them by the Government in large quantities; and in their almost countless hut robberies they never failed of taking away every blanket they found there.

But of all created animals, the untaught savage is the most imprudent; and he often kept his prize no longer than it suited the idle habits of the wanderer to carry it. Hence, he was wrapped up like a mummy one week, and was as naked as a newly-born infant the next. The climate of Tasmania is also a variable one. True, there is hardly such a thing known as extreme heat or cold, but there are very rapid changes of temperature, from moderate heat to coolness. Cold, in the Englishman's sense of the word, is unknown, except in the high lands of the country, where for five months of the year it is bitter enough, and something like a seventh or eighth of its area is over two thousand feet high; and no little part of these high-lying lands is double that elevation, and a good deal more, and therefore both chilly and humid. The surface is quite as varying as the climate, hence the general beauty of its scenery. Now any person, whether savage or civilised, who wraps up at one time and goes perfectly naked at another, exposed to very frequent changes of temperature, is certainly not likely to keep long in health, but is assuredly laying the foundation of fatal consumptive complaints, from which (such was the peculiar constitution of the Tasmanian savage) almost immediate death was certain, and whenever he took cold it seems to have settled on his lungs from the first. Speaking of the many deaths occurring amongst this people from this cause, Robinson says

"they are universally susceptible of cold, and unless the utmost providence is taken to check its progress at an early period, it fixes itself on the lungs, and gradually assumes the complaint spoken of, *i.e.*, Catarrhal Fever." (Report, May 24, 1831). Again, speaking of the tribes inhabiting the Western districts, he says, "The number of aborigines along the Western Coast has been considerably reduced since the time of my first visit," that is, at the beginning of 1830; "a mortality has raged amongst them, which, together with the severity of the season and other causes, has rendered their numbers very inconsiderable." (July 29, 1832.) I am little versed in the science that treats of epidemic disease, and cannot therefore explain the processes by which they are spread through entire communities with something like telegraphic rapidity, but it is visible to us all, and therefore requires no verbal proof; and the savage of Tasmania was more than ordinarily liable to its attacks, which, unlike the European, he knew no remedy for, and sought only to relieve his pain by a process far more likely to be injurious than beneficial, namely, the excessive laceration of his body with flint, or glass if he could get it, which, by producing weakness, made death only the more speedy and certain. He had none of the appliances or comforts of civilised life, and succumbed at once. Colds, settling almost instantly on the lungs, sent them to the grave by hundreds; and no wonder that Robinson found a whole tribe housed in a single hut, for whom a twelvemonth before six or seven were necessary; and I quite believe that the original cause of their decay lay in their own imprudence, generating fatal catarrhal complaints, from which a European, by proper remedial measures, resorted to early, would easily have recovered. These imprudences were, of course, practised only by a few tribes inhabiting the settled districts, but the consequences, which are of course epidemic, infected all before long.

Many of the tribes, particularly of the Western and South Western Coast districts, which were known to be very strong in numbers, long after the first colonisation of the country, were not exposed to contact with the whites, and yet when taken, they hardly ever consisted of twenty persons, and when larger numbers were brought in at any one time they were always of more than one family.

Of their rapid mortality when under the immediate observation of the protector at Bruny, Flinders, and Hunter's Islands, I have said enough already. But it may not be improper to add that at the last-named asylum, sickness was sometimes induced by the neglect of the Government, which persisted for some months in supplying them with salt provisions (in spite of the repeated and strenuous remonstrances of Robinson), which they

hated the very name of, and only ate from necessity, but to which they were too long restricted. The little game there was left on the island, after the incursions of the sealers were prohibited, was speedily demolished by the natives. Of shell-fish, there were few or none hereabouts, and no other fish would any native of Tasmania ever touch; whether it was natural aversion or superstition is not known, but scale-fish of any kind was as much an abomination to the entire race as swine's-flesh to the Jew or Mussulman: and they would literally rather starve than eat it. In this respect they quite differed from the New Holland savages, by whom it is greatly relished. From some not very satisfactorily explained cause, the sheep on the island were not touched. Robinson says they were too young and too small for killing; but the consequence of restricting the natives to salt provisions was to bring on scorbutic complaints, which terminated fatally in some instances.

Treatment of the Dead.—In one of the protector's earliest reports, 12th June, 1829, he gives some lengthy, but very interesting, particulars of their mode of disposing of the bodies of their dead. He relates nothing but what he saw himself, of the death of the patient or patients, and final disposal of the corpse. As nothing can be more simple or touching than his account of the subject, I shall quote all he says about them. The scenes he describes took place on Bruny Island in 1829:—

“Extracts from my journal.—Monday, May 18, 8 a.m.—Visited the aboriginal family, Joe, Mary, and two children. Mary evidently much worse, appeared in a dying state. Looked wistfully at me, as if anxious for me to afford her relief. Alas! I know not how to relieve her. Only the Lord can relieve in such trying circumstances. Inquired of her husband the cause of her affliction; he said ‘Merriday, byday, ligdinnny, loammerday’ (sick, head, breast, belly.) On each of those parts incisions had been made with a piece of glass bottle. The forehead was much lacerated, the blood streaming down her face. Her whole frame was wasted. She had a ghastly appearance; she seemed in dreadful agony; her husband, much affected, frequently shed tears. . . . Made her some tea; could not bear the afflicting scene; returned to my quarters; the husband soon following me, his cheeks wet with tears, said his ‘luberer, lowgerner un uenee’ (wife, sleep by the fire). Stopped about half an hour. I made him some tea for his children. Asked him if he would take his luberer any. He said ‘tea-noailly, parmatter, panmerlia linener, no-ailly’ (tea no good, potatoes, bread, water no good), meaning his wife had no wish for food of any kind. In about half an hour I met him coming towards my quarters with his two children, kangaroo skins, etc. At about a hundred yards distant I saw a large fire.

It immediately occurred to me that his wife was dead, and that the fire I then saw was her funeral pile. I asked him where his luberer was. He said 'loggeenee-uenee' (dead—in the fire). Walked to the place; the wind had wafted the fire from her body; her legs were quite exposed (here follow a few illegible words); the fire had burnt out; the body was placed in a sitting posture. While ruminating on the dire mortality that had taken place amongst the people of this tribe, I was interrupted in my reverie by the husband of the deceased, who requested I would assist him in gathering who-ee (wood) for the purpose of consuming the remains of the body. My feelings were considerably excited at this—an office of all others I never could have conceived I should have been called on to assist in."

Poor Joe's own turn came in less than a fortnight, and Robinson's journal thus describes his death, and gives this time a fuller detail of the funeral ceremonies of a native.

"Sunday, May 31, 5 p.m.—The sick aboriginal requested to have a fire made outside of the hut, to which he desired to be carried. Imagining that this man could not survive long without immediate medical relief, I ordered the boat to be got ready, intending to send him to town. But God's will be done. He expired ere it was ready. These are afflictive providences. In the death of this man and his last wife Mary, the establishment has sustained a great loss. He was kind, humane, and remarkably affectionate to his children.* . . . Last Sabbath he appeared in good health, but his spirits were evidently broken since the death of his last wife. He has left two helpless orphans to lament his loss. I took occasion to converse with the natives on account of the death of his two wives, but they told me they did not like to speak of it." (It is right to say that they never spoke of the dead, nor ever again mentioned their names.)

"Manner of Burning the Dead.—I was busy preparing for his departure to Hobart Town for medical assistance, when the groans of this man ceased, and with them the noise of the other natives. A solemn stillness prevailed—my apprehensions became excited—I went out—he had just expired. The other natives were sitting round, and some were employed in gathering grass. They then bent the legs back against the thigh, and bound them round with twisted grass. Each arm was bent together, and bound round above the elbow. The funeral pile was made by placing some dry wood at the bottom, on which they laid some dry bark, then placed more dry wood, raising it about two feet six inches above the ground; a quantity of dry bark was then laid upon the logs, upon which they laid the corpse,

* Another of these Bruny islanders named Woureddy, had the same good qualities, but they were rare amongst the men, who were very tyrannical.

arching the whole over with dry wood, men and women assisting in kindling the fire, after which they went away, and did not approach the spot any more that day. The next morning I went with them to see the remains, and found a dog eating part of the body. The remains were then collected and burnt.

"I wished them to have burnt the body on the same spot where his wife had been burnt, but whether because it was too much trouble, or from superstitious motives, I know not, but they did not seem at all willing; I therefore did not urge it. After the fire had burnt out, the ashes were scraped together, and covered over with grass and dead sticks."

While the natives were making the funeral pile, Robinson took occasion to extract from them what their ideas were of a future state, and where they thought the departed went to. They all answered "Dreeny," that is to England, saying "Par-leovar loggernu uenee toggerer Teeny Dreeny, mobberly Par-leovar Dreeny" (native dead, fire; goes road England, plenty natives England). From what they had seen of the productions of the superior race, they probably thought there was no happier abode in the universe than England.

He tried to convince them that England was not the home of the departed, and though, like some other orators, he talked them down, he did not argue them out of their belief.

It has been often said that they had no idea that there was such a thing as a future state; but this simple reply shows that, however imperfect their notions were on this subject, they quite believed in a life beyond the grave, or rather after the destruction of the body at the funeral pile. He adds that they were fatalists, and also that they believed in the existence of both a good and evil spirit. The latter, he says, they called Raegoo wrapper, to whom they attributed all their afflictions. They used the same word to express thunder and lightning. He also says that the dying native had a keen perception of his approaching end, and when he knew it was at hand his last desire was to be removed into the open air to die by his fire.

In the same report, he says, they always retired to rest at dusk, rising again at midnight, and passing the remainder of the night in singing, to his own very particular discomfort, as there was no more sleep for him after they woke up. "My rest," he says, "has been considerably broken" (by this disagreeable practice of theirs of night-singing), "in which they all join. This is kept up till daylight; added to this, is the squalling of their children," and here he ends the sentence.

In a subsequent report, August 6, 1831, written after he became acquainted with the hostile tribes, he says that the most popular of their songs were those in which they recounted their attacks on and their fights with the whites.

It has been customary to rank the Tasmanian savages with the most degraded of the human family, and as possessed of inferior intelligence only. But facts quite disprove this idea, and show that they were naturally very intellectual, highly susceptible of culture, and above all, most desirous of receiving instruction, which is fatal to the dogma of their incapacity for civilisation. Reasoning from such facts as that they went perfectly naked, were unacquainted with the simplest arts, were even ignorant of any method of procuring fire, and erroneously thought to have no idea of a Supreme Being or future condition, they were almost held to be the link that connected man with the brutes of the field and forest.

The aboriginal's wants were, indeed, so few, and the country in which it had pleased the Almighty to place him supplied them all in such lavish abundance, that he was not called on for the exercise of much skill or labour in satisfying his requirements. He had no inducement to work, and (like all others who are so situated) he did not very greatly exert himself. Necessity, said to be the parent of invention, was known to him only in a limited degree; and his ingenuity was seldom brought into exercise. His faculties were dormant from the mere bounty of providence. The game of the country and its vegetable productions would have amply supported a native population ten or a dozen times larger than it ever was. Kangaroos, opossums, wombats, birds, shell-fish were plentiful, far in excess of his wants. Of fruits, there are, indeed, none worthy the name. But in the vast forests of the country are to be found very many vegetables which, though quite disregarded by Europeans, were relished by the savage; and Robinson, in one of his letters, speaks of his resorting to their practice of using certain edible ferns, which are so abundant in many districts that credulity could hardly believe it.

His country, lying a little north of a line, mid-distant from the pole and equator, the climate of its low-lying lands is necessarily mild and very agreeable, so that bodily covering of any kind, though prized after habituation to it, was easily dispensed with, and the skin of the kangaroo, so fastened over one shoulder as not to impede the free use of the arms, was enough for the female and her infant, the adult male going generally quite naked. That he was ignorant of any artificial means of procuring fire may be traced to the nature of the woods of his country, which, with hardly an exception, are nearly as hard as whin-stone, and not very inflammable either, so that no amount of manual friction could possibly ignite them. Hence his fire, however he first obtained it, like that of Vesta, was never suffered to die out, it being the province of the women to keep it con-

stantly supplied with fuel when the tribe was stationary, and to preserve it when on the move, by bark torches renewed as required.

In stature, some of them were tall, and a few were robust ; but the most of them were slimly built persons, wiry and very agile. The features of neither sex were prepossessing, especially after they had passed middle age. Their noses were broad, and their mouths generally protruded extremely. In youth, some of the women were passably good-looking, but not so the most of them ; and only one of the many I have seen—the wife of a chief—was handsome. The women, however, appeared to great disadvantage, by their fashion of shaving the head quite closely, which in their wild state was done with flints and shells, and afterwards with glass, when they could get it. The men, on the contrary, allowed their hair to grow very long, and plastered it all over very thickly with a composition of red ochre and grease, and when it dried a little their locks hung down so as to resemble a bundle of painted ropes, the red powder from which falling over their bodies (which were naturally a dull black colour), gave the naked savage a most repulsive look.

The shoulders and breasts were marked by lines of short, raised scars, caused by cutting through the skin and rubbing in charcoal. These cuts somewhat resemble the marks made by a cupping instrument, but were much larger and further apart.

They never permitted their wives or children to accompany them in their war expeditions, either against the whites or enemies of their own race, but left them in places of security and concealment ; and Robinson told me that, though their wives went with them in their hunting excursions, they did not allow them to participate in the sport, and that they acted only as drudges to carry their spears and the game ; but that the fishing (for shell-fish only, obtained by diving) was resigned wholly to them. The men, he said, considered it beneath them, and left it and all other troublesome services to them, who, in nine cases out of ten, were no better than slaves. If a storm came on unexpectedly, the men would sit down while the women built huts over them, in which operation, as in all others of a menial nature, the man took no part. To make his own spears, to hunt, fight, and salve himself with his ochreous mixture, were his principal, and perhaps only, occupations.

The huts of this people were the frailest and most temporary structures conceivable. They were often meant only for a night, and perhaps were seldom occupied for a week, though those of some of the west coast tribes were more substantial. Uniformity of design was, of course, quite out of the question ; for these hovels were suited to the circumstances of the moment only.

Some that I once met with in the Western Mountains seemed to have been constructed in a great hurry, and were composed of a few strips of bark laid against some large dead branches that were used just as they had fallen from the trees above. Others that I have seen had evidently been occupied for several nights. These were also of bark, supported on sticks driven a little into the ground, and were adorned, according to their ideas of ornament, with several rude charcoal drawings, one representing a kangaroo of unnatural appearance, that is, with its forelegs about twice as long as the hinder ones; another was meant for an emu; a third was also an animal that might have been either a dog, a horse, or a crocodile, according to the fancy of the connoisseur. But the *chef-d'œuvre* was a battle-piece, a native fight—men dying and flying all over it. These huts were closed only on the weather side, and perfectly open in front, some large enough for several persons, others less; and the one with the elaborate designs was, I suppose, the residence of a single gentleman, being the least of all.

His spear was a long thin stick pointed at both ends, made of a hard heavy wood, called by the colonists tea-tree. The weapon of the adult was ten feet long or more, and was thrown from the hand only, with great force and precision, having a range of, I believe, about sixty or seventy yards. Both the throwing-stick and shield of the New Hollander were unknown to him.

The only other weapon he used was the waddie. This was made of the same wood as the spear; not two feet long, and thicker at one end than the other. It was held by the thinner end, and was used either as a club or missile. Used for the latter purpose, it was hurled with awful force and certain aim. When his other weapons failed him he fought with stones, and even with these was a very formidable opponent. The waddie, however, was chiefly used in the chase.

In fight, the vengeance of the savage was not appeased by the death of an enemy. The mutilation of the body, and particularly of the head, always followed, unless the victor was surprised or apprehended surprise. This was done either by dashing heavy stones at the corpse, or beating it savagely with the waddie. In many of the inquests that I have spoken of in the early part of this paper the deceased were hardly recognisable.

The Tasmanian aboriginal, in advancing on an unsuspecting victim whom he meant to kill treacherously, approached apparently quite unarmed, with his hands clasped and resting on the top of his head, a favourite posture of the black, and with no appearance of a hostile intention. But all the time he was dragging a spear behind him, held between his toes, in a manner that must have taken long to acquire. Then by a motion as

unexpected as it was rapid, it was transferred to the hand, and the victim pierced before he could lift a hand or stir a step. This practice and some others of theirs, are, I believe, common in New Holland, and seem to favour the idea of original migration from thence. But they were not of the same stock. There was one very marked difference between the races, the Australian being a straight-haired man, and the Tasmanian wool-headed.

The hatred of the women for their half-caste offspring has been named before, and I have been told that the New Holland woman has the same aversion. My informant was a gentleman who had resided long in the wilds of Australia, and said that though children of mixed blood were to be met at the encampments of the blacks, he never saw an adult half-caste amongst them, and he believed they destroyed them. There are about a hundred of them now living in the Straits, the results of union between the sealer and savage, many of whom have even reached old age. But here the parents lived together in settled life, and the fathers, bad as they are said to have been, were there to protect their children. No doubt the characters of these men have been taken from the worst and most hardened of them. But in Australia I have heard that the union from which these unfortunates are produced is of the most temporary nature, and usually dissolved after a brief intimacy, the care of the offspring of it being wholly surrendered to the mother, in whose charge it seems never to reach even adolescence.

It is nowhere stated, that I know of, that polygamy was practised by the Tasmanian; but as the man Joe, whose death and funeral ceremonies I have recorded, had two wives at the same time, it cannot be said that the practice was unknown to them.

To the other services rendered by the woman, must be added the entire care of the children. She carried her infant, not in her arms, but astride her shoulders, holding its hands.

The construction and propulsion of the catamaran, or boat of the native, was also the work of the women. This "machine," as Robinson contemptuously calls it, was only used by the people of the south and west coasts. The northern and east coast tribes, he says, "have not the slightest knowledge of this machine" (Report, February 24th, 1831). The configuration of the north and east coasts—which are not much indented with bays, made it hardly necessary to the people inhabiting them. It was of considerable size, and something like a whale-boat, that is, sharp-sterned, but a solid structure, and the natives in their aquatic adventures sat on the top. It was generally made of the buoyant and soft velvety bark of the swamp tea-tree (*Melaleuca Sp.*), and consisted of a multitude of small strips bound together. The

mode of its propulsion would shock the professional or amateur waterman. Common sticks with points instead of blades were all that were used to urge it with its living freight through the water, and yet I am assured that its progress was not so very slow. My informant, Alexander McKay, told me they were good weather judges, and only used this vessel when well assured there would be little wind and no danger, for an upset would have been risky to some of the men, who, unlike the women, were not always good swimmers, though most of them were perfect. In crossing from South Bruny to Port Esperance, which they sometimes did, the distance is not less than eight or ten miles, and in stormy weather this is no pleasant adventure, even in a first-class boat.

They were great flesh-eaters, but not cannibals, and never were; and some of them, being incautiously asked if they ever indulged in this practice, expressed great horror at it. They never named the dead, and certainly never ate them. Large and small game was supplied them so plentifully, that they had no occasion to resort to this revolting custom.

Their mode of ascending trees after opossums was to cut small notches in the barrel, just large enough to admit the toes. These were cut with a sharp stone. The labour of making these stepping-places with these simple instruments was such as to cause them to cut them at long intervals, which induced the discoverer of the country, Tasman, to believe they must be of gigantic stature, which I need hardly say they were not.

Their condition in a land of plenty rendered an acquaintance with arts of any kind nearly unnecessary. The fabrication of their simple arms, of baskets, canoes, string, and necklaces, I believe, exhausts the list of their manufactures.

Their baskets were made of the long leaves of the plant called cutting-grass, very neatly woven together; and the necklaces of small, beautiful shells, iridescent, the purple tint predominating. These shells in their natural state have no great beauty, but after removing their outer coating, their appearance is quite altered. This removal they effected with acids, how obtained in their wild state I know not, but I presume from wood. In their captivity at Oyster Cove, where they made them for sale, they used vinegar. I think a moderate heat was necessary in removing this outer covering, for, on visiting their huts when they were preparing them, a woman handed me a saucer of them, which she took from the fireplace.

A curious account of one of their places of meeting is preserved in an official letter, written by Mr. W. B. Walker, dated December 24th, 1827, from which the following is taken:—

“Some time since Mr. W. Field had occasion to search for a

fresh run for some of his cattle, in the course of which he found a fine tract of land to the west of George Town, in which is an extensive plain, and on one side of it his stock-keepers found a kind of spire, curiously ornamented with shells, grasswork, etc. The tree of which it is formed appeared to have had much labour and ingenuity bestowed upon it, being by means of fire brought to a sharp point at top and pierced with holes in which pieces of wood are placed in such a manner as to afford an easy ascent to near the top, where there is a commodious seat for a man. At the distance of fifteen or twenty yards round the tree are two circular ranges of good huts, composed of bark and grass, described as much in the form of an old-fashioned coal-scuttle turned wrong side up, the entrance about eighteen inches high, five feet or six feet high at the back, and eight feet or ten feet long. There are also numerous small places in form of birds'-nests, formed of grass, having constantly fourteen stones in each. The circular space between the spire and the huts has the appearance of being much frequented, being trod quite bare of grass, and seems to be used as a place of assembly and consultation. In the huts and the vicinity were found an immense number of waddies, but very few spears. The stock-keepers, several of whom have given me the same account, call them preaching places, and state there are two others, but of inferior construction, one about five miles from the Supply Mills, and the other west of Piper's Lagoon, north of the Western River (now the Meander). One of my informants, who has been much in the habit of kangaroo hunting, says they are places of rendezvous, where the natives keep a large stock of spears and waddies. He described the spears as carefully tied to straight trees with their points at some distance from the ground. He states that he has frequently met small parties of natives on their way to and from the two last-named places, and that the parties that ramble about this part come from thence."

Animosities ran high amongst them, and their quarrels never died out except with the extinction of their enemies. They made long marches to surprise them; and to come on them unperceived, if possible, was their constant object. But it was most difficult to approach them thus, the greatest circumspection being necessary, for such was their vigilance, that it was rare to catch them off their guard; and this difficulty must have been much increased when they became possessed of dogs, of which every tribe had an immense pack, varying from thirty to one hundred. In a country less abounding in game than Tasmania, such numbers could not have been kept. There seems to have been an hereditary feud between the men of the east and the west, and whenever their captor, Robinson, met them they were

either on the march to meet their ancient opponents, or were returning from a victory; for I do not recollect a single instance in which they ever acknowledged defeat.

Their march was described to me as a very regular one, and that they stepped pretty well together, singing or shouting some war chant, and rattling their spears as they went along, striking the ground with great force with the foot every third or fourth step. The look of each was determined and ferocious beyond expression.

Capacity for Civilisation.—Of their mental faculties and aptitude for acquiring knowledge, he speaks in laudatory terms. In a lengthy report, dated July, 1836, he gives a great deal of valuable information on these interesting subjects, which dispels the long-received notion that they were incapable of civilisation; and, as this intelligence relating to an extinct race can hardly fail of gratifying laudable curiosity, I shall repeat a good deal of what he says, running the extracts I make into a continuous narrative:—

“The minds of the aborigines,” he says, “are beginning to expand. They have more enlarged views of their present situation, and are grateful for the favours conferred upon them. They are volatile in their spirits, and are extremely facetious and perfectly under command. They studiously avoid exciting my displeasure, and appear grieved if they imagine I am in the least offended. The natives are placed under no kind of restraint, but every degree of personal freedom consistent with a due regard to their health, and the formation of religious and civilised habits. The natives are now perfectly docile, and the greatest tranquillity exists among them. The mortality that has taken place among the aborigines on the islands may be attributed to a variety of causes, but the following appear to be the chief—the exposed and damp situations of their dwellings, and the frail manner of their construction; their want of clothing, the saline property of the water, and the continued use of salt provisions. The catarrhal and pneumonic attacks to which they are so subject, and which are the only fatal diseases among them, are caused by the injudicious system of changing their food and manner of life.

“The natives are instructed in the principles of the Christian religion. Public worship is celebrated twice on the Sabbath. The service is commenced by singing, and reading from the Scriptures select portions, etc. A short prayer, a few cursory remarks from Scripture are then delivered, when the service is concluded by singing and prayer. The native youth, Walter, acts on these occasions as clerk, giving out the hymns, and reading the responses. The rest of the service is conducted by the catechist.

“Catechetical instruction is the best suited to the capacities of the natives; for which purpose the catechist was a short time since to commence a course of this instruction on Tuesday evenings, and which is the only weekly religious instruction afforded the natives.

“In reference to the foregoing subjects, I am proud to state that the most astonishing and marked improvement has taken place among the aborigines. In the attendance at divine worship the people are left, in a great degree, to their own choice, and which, in matters of religion, I think they ought. But, as example teaches before precept, I am a constant and regular attendant. Their conduct during divine worship is of the most exemplary kind. They are quiet and attentive to what is said, and the church is crowded. The ignorance of the natives heretofore in the first principles of religion was more the fault of the system than of the people, for I am fully persuaded they are capable of high mental improvement.

“Sacred Melody.—This had always appeared to me a delightful part of worship, and, as the natives were generally partial to music, I requested singing to be introduced. It is truly gratifying to see with what avidity they listen to this part of devotion. The singing of the women and of the native youth has a pleasing effect, their melody being soft and harmonious.

“My family and the civil officers and their wives act as teachers (*i.e.*, of the native schools), and the average attendance is from sixty to eighty. No language can do justice to the intense anxiety manifested by the adult aboriginal for learning; it must be seen to be properly comprehended. The desire of the natives for learning is not the result of compulsion, but is the free exercise of their own unbiassed judgment. Six months have now passed away since the schools were commenced, and there is not the slightest diminution of their number. The same vehement desire continues unabated. The anxiety of the natives for the attainment of knowledge is great. Their proficiency is astonishing. Some are now able to read in words of three syllables. The juveniles are making considerable proficiency in learning, and several are in writing, and have acquired a knowledge of the relation of numbers, and some can add tolerably correctly.

“The aborigines have shown every disposition to become civilised. The men are employed in rural and other pursuits, and the women are occupied in domestic concerns, for which these people have shown the greatest aptitude, and by their frequent inquiries evinced the strongest desire to become acquainted with the arts of civilised life. Their wild habits are fast giving way. Their corrobories (*i.e.*, violent dances, accom-

panied by vociferous singing) and peregrinations into the bush are less frequent. They are becoming more cleanly in their persons, and are rapidly acquiring industrious habits. The use of ochre and grease, to which they were so much addicted, they have entirely refrained from. The women take particular pains in the arrangement of their domestic economy. Their cottages are carefully swept twice a day. The cleanliness, order, and regularity observed by the inmates of the new cottages in the disposition of their culinary utensils, furniture, bedding, would do credit to many white persons. In sewing, the women have made great proficiency. They make all their dresses. The native women provide fuel for their fires, they also wash their own clothes, bedding, etc. The male aborigines are equally industrious. A road more than half a mile in length, cut through a dense forest in the rear of my quarters to the beach, as well as cross roads, has been done by them. Several acres of barley, the first grown upon Flinders Island, have been reaped by them with the assistance of the civil officers, and the facility with which they executed this branch of husbandry was a matter of surprise to every one. The Big River and Oyster Bay tribes, taken collectively, are the most advanced in civilisation (these and the Stony Creek tribe were the most ferocious and predatory of all the natives), and the western tribes, who occupied a country far remote from any settlement, and, therefore, could not have acquired any previous knowledge of rural pursuits, were equally as ready at reaping as the others. Indeed, their aptitude to acquire knowledge can scarcely be credited.

"The natives now cook their own meat and bake their own bread. The contrast between their present and past condition in this respect is striking in the extreme. In their primitive state their mode of cooking was to throw the animal upon the fire, and when half warmed through take out the entrails, and rub the inside over with the paunch. It was then eaten. Their mode of cooking now is widely different. They follow the example of the whites, and adopt their practices in everything.

"Their chief amusement is hunting, and it seems they soon extirpated the game. When at the settlement, they amuse themselves by dancing, bathing, cricket, trap-ball, playing, and recently they have constructed swings. But the amusement to which they are most partial is marbles. The women join in the dance, and have lately taken a fancy to play at marbles also. I have given several entertainments in the bush, which the officers have attended. These festivities afforded them much amusement."

He concludes an interesting report by saying he believes they have no desire to return to their old haunts and ways of life, and

so long as he was with them to keep their minds and bodies in exercise it is very likely they thought but little on the subject of their former wild existence. But I have been told that the natural longing for their own districts afflicted them greatly after his family left the island, and that they often sat for hours looking at the hills of the main land, which in clear weather were visible from Flinders Island. But after years of confinement at the Wyba-Luma settlement, they lost hope and fell into apathy.

And those who saw the aborigines after their removal from Wyba-Luma to Oyster Cove could never believe them to be part of the same people, who ten years before had given such goodly proof of rapid emergence from barbarity.

The language of the tribes seems to have been simple enough, consisting chiefly of verbs, adjectives, and substantives; and from the few authentic translations that have reached us of conversations, etc., a good deal must have been left to the understanding of the person addressed. A couple of examples taken from one of Robinson's long letters will illustrate my meaning. Thus a man whose wife was dying, and to whom he offered food for her, said: "Tea-noailly—parmatter—panmerlia—linener, noailly," which he translates, "Tea, no good—potatoes—bread—water, no good; meaning," says Robinson, "that his wife had no wish for food of any kind." He gives a portion of a Sunday address that he made to them (for he was an occasional preacher), as follows:—"Matty (one) nyrae (good) Parlerdee (God). Parleevar (native) nyrae (good), parleevar (native) log-ger-nu (dead), taggeerer (go) lowway (up) waeranggelly (sky). Parlerdee (God) lowway (up). Nyrae (good) raegee (white man) merrydy (sick), nueberrae (looks) Parlerdee (God) waeranggelly (sky). Kanernnu (speaks or prays) Parlerdee (God). Nyrae (good) Parlerdee (God) nueberrae (sees) nyrae (good) raegee (white man) timeme (no) merrydy (sick). No ailly (bad) parleevar (native) log-ger-nu (dead) tageerer (goes) toogunner (down). Raegeowrapper (evil spirit, or devil) uenee (fire) maggerer (stops). Parleevar (native) tyrer (cry). Nyrae (good) parleevar (native) maggerer (stops) Parlerdee (God) waeranggelly (sky), timeme (no) merrydy (sick), timeme (no) taggathe (hungering)."

The frequent occurrence of all the liquid letters in the few words given above will strike every reader. Their language, which is all but lost, was peculiarly soft; and, except when excited by anger or surprise, was spoken in something of a singing tone, producing a strange but pleasing effect on the sense of the European.

The Chairman announced that the Council had appointed a

Committee for the purpose of promoting psychological research, with power to add to their number, and to confer with other scientific bodies. The gentlemen named to serve on the committee, were Mr. Francis Galton, F.R.S. (Chairman); Dr. John Beddoe; Mr. Hyde Clarke; Mr. David Forbes, F.R.S.; Colonel Lane Fox; Mr. E. Burnet Tylor, F.R.S.; and Mr. Alfred R. Wallace, F.L.S.

The meeting then adjourned.

FEBRUARY 18TH, 1873.

Professor BUSK, F.R.S., *President, in the Chair.*

THE minutes of the previous meeting were read and confirmed.

ARTHUR ROBERTS ADAMS, Esq., Q.C., D.C.L., St. John's College, Oxford, was elected a member.

The following presents were announced, and the thanks of the meeting voted to the respective donors:—

FOR THE LIBRARY.

From JAMES BURNS, Esq.—Human Nature for February 1873.

From the ASSOCIATION.—Journal of the Royal Historical and Archaeological Association of Ireland, No. 12, 1872.

From the EDITOR.—The Food Journal for February 1873.

From the EDITOR.—La Revue Scientifique, Nos. 32, 33, and 34, 1873.

From the SOCIETY.—Proceedings of the Royal Society, vol. xxi, No. 141.

From the SOCIETY.—Actes de la Société d'Ethnographie, No. 25, January 1873.

From the REGISTRAR GENERAL.—Statistics of New Zealand.

From the EDITOR.—Nature (to date).

The Director read the following paper:

NOTE on the MACAS INDIANS. By Sir JOHN LUBBOCK, Bart., M.P., F.R.S., Vice-Chancellor of the University of London.

THE Macas Indians of Equador are scattered tribes occupying the country immediately on the eastern side of the Andes, a few degrees south of the equator. They have recently been visited

by Mr. C. Buckley, who spent eighteen months in the district. He brought back with him four prepared heads, two of which I have now the honour of exhibiting to the Society. They belong to a chief named Hilinchima and his wife, Wahari. This chief had also another wife, and the three lived with the man's father and mother, forming a family party of five. The Macas Indians are divided into small tribes, which are constantly at war with one another. This unfortunate family belonged to the Atchwali tribe, and were attacked and murdered one night in their sleep by a party of Xebros Indians, making, however, a desperate resistance, in the course of which they received numerous wounds, some of which are still visible. The heads are very remarkable on account of the small size to which they have been reduced. Though belonging to full-grown individuals, they only measure 11 inches and $9\frac{1}{2}$ inches respectively.

The process of preparation, according to the account given me by Mr. Buckley, is very simple. The head is removed, and, after being boiled for some time with an infusion of herbs, the bones, etc., are removed through the neck. Heated stones are then put into the hollow, and as they cool are continually replaced by others; the heat thus applied dries and contracts the skin, reducing the head to the size shown in the figure. It will be seen that Mr. Buckley's account confirms that given by M. Barriero.* A string is then run through the head, which is suspended in the hut, and solemnly abused by the owner, who is answered by the priest speaking for the head, after which the mouth is sewn up to prevent any chance of a reply. The abuse is repeated on feasts and any special occasions.

According to M. Barriero the heads thus prepared are treated as idols, and the first which came to Europe was obtained by a ruse, the owner being assured that the head wished to travel. The same custom and mode of preparing the heads are common to other neighbouring tribes.

The Macas Indians live by hunting, though the women grow some maize and a little yucca, as well as a few plants of tobacco.* The men use spears, but their principal weapons are blowpipes and poisoned arrows. Their huts are oblong in form, built of palms and thatched with palm leaves. The men are polygamous, but never have many wives. They acquire wives by purchase or by capture, by purchase if the woman belongs to the same tribe, but otherwise by force. The captured women are generally murdered after awhile for the sake of their heads. The women do all the household work.

They have no temples or priests, but are firm believers in witchcraft; Mr. Buckley, however, found it difficult to obtain

* Ethnological Journal, vol. ii, p. 112.

any clear insight into their religious views, and is reluctant to place on record statements which might not be strictly correct. It would have been well if all travellers had been equally cautious. The Macas Indians have doctors, whose remedies however are mainly, if not entirely, magical. If they fail to effect a cure, they are sometimes put to death themselves. The Macas Indians are generally named after animals. When the head of a family dies, he is placed on a bed of split bamboo, the door is fastened up and the hut deserted. Children are buried in the ground without any ceremony. Food and water are generally placed with the dead, but not, as a general rule at any rate, either arms or implements. Property descends in the male line. The Macas Indians are not cannibals. They keep dogs and fowls, and are very fond of pets, especially monkeys and parrots. They count up to ten. The dress consists of a waistcloth, and there is little difference between the sexes. Their feet are bare. They are very fond of ornaments, and some women pierce the under lip. Earrings are also worn. The son succeeds to the father's property. They make rude pottery, which they burn in open fires.

DISCUSSION.

MR. FRANKS said :—The shrunk head made by the Jivaro Indians, mentioned by the President as exhibited in the London Exhibition of 1862, was there called an Inca's head! It is now in the Christy collection, and closely resembles those exhibited by Sir John Lubbock. A similar head is in the British Museum, presented by the late Mr. Fagan, H.B.M. envoy to Venezuela. A still more remarkable specimen is preserved in the National Collection, to which it was presented by H.R.H. the Prince Consort in 1853. It is only about one inch in height, and fixed to a stick dressed up as a doll. It was discovered in an ancient grave at Pisco in Peru. An account of the Jivaro heads was published by Mr. W. Bollaert, in the "*Transactions of the Ethnological Society*", New Series, vol. ii, p. 112, and in the "*Intellectual Observer*", vol. i, p. 134. The Mundurucus of the Upper Amazon preserve the heads of their enemies, leaving them the natural size, but adding the same strange strings as in the examples before us. Specimens of these heads are engraved in Spix and Martius, "*Reise in Brasilien*" Atlas, pl. 33, and in Wood's "*Natural History of Man*", vol. ii, p. 575. Two of them are preserved in the Christy Collection, and together with the Jivaro head form the subject of plate 129 in the "*Series of Photographs of the British Museum*", published by Mansell & Co.

MR. HYDE CLARKE observed that what had been stated in the discussion showed that this practice was not isolated. Indeed it is a great question whether there is anything in weapons, monuments, mythology, folk lore, or language in America, North and South, which has not a community with the rest of the world. So far as he had

been able to see with regard to languages, those of America all belonged to the same classes as those of the Old World, up to the same epoch ; for a remarkable feature in America was the arrested development due to the cessation of its participation in the great migrations, which culminated in those of the higher races. America shared in what appeared to be the earliest languages of the dark and dwarf races, and so in each series. He therefore doubted whether any indigenous American language would be found as to roots or grammar. There is, in fact, no distinctive American grammar, as supposed. He would only advert to some recent observations he had made. The great language of the South American plains, the Guarani, in roots and grammatical forms agreed with the Abkhass of the Caucasus, and thereby with the great Agaw group. Having noticed that the equivalent of Sky Man was used for the sun by some of the American tribes, he found the same form was adopted by the Sonthals, with whose language that of the tribes most agreed.

The following paper was read by the author.

On the RELATION of the PARISH BOUNDARIES in the SOUTH-EAST of ENGLAND to GREAT PHYSICAL FEATURES, particularly to the CHALK ESCARPMENT. By WILLIAM TOPLEY, F.G.S., Geological Survey of England and Wales.

It has often been observed that the outcroppings of various geological formations are marked by the occurrence thereon of numerous villages, whilst certain neighbouring formations are almost without any. Illustrations of this fact will suggest themselves to every one acquainted with the geology of almost any district in England, and it will be sufficiently illustrated in the course of this paper ; but perhaps a few other examples may here be given.

A most striking case is that afforded by the gradual growth of London. All that area on which the older parts of London were built is covered with gravel, which yielded a supply of water. "A map of London so recent as 1817, shows how well-defined was the extension of houses arising from this cause. Here and there only beyond the main body of the gravel there were a few outliers, such as those at Islington and Highbury ; and there habitations followed * * * * It was not until facilities were afforded for an independent water supply, by the rapid extension of the works of the great Water Companies, that it became practicable to establish a town population on the clay districts of Holloway, Camden Town, Regent's Park, St. John's Wood, Westbourne, and Notting Hill."*

* Mr. Prestwich's Anniversary Address to the Geological Society, Feb. 1872. "Quarterly Journal of the Geological Society," vol. xxviii, p. liv.

The eastern part of Northumberland is much covered with drift deposits, chiefly Boulder Clay, but with some beds of sand and gravel; from beneath the Boulder Clay, there rise up in many places isolated areas of sandstone belonging to the Coal Measures and Millstone Grit. On these rocky patches most of the ancient villages and the more important hamlets are built. Here the soil is dry, and springs occur at the edge of the clay. Some places are situated on the sand beds of the drift. The sites of these old settlements were determined by the surface soil, but the sites of a great number of the modern villages have been determined by the underlying minerals.

It is interesting to note that nearly all of the settlements in this district which have the characteristic old English names, such as *Acklington*, *Bedlington*, *Cramlington*, etc., are built upon rocky sites or upon sand. In the district lying between the River Coquet and the Tyne, and which is bounded on the west by the bottom of the Millstone Grit, there are in all twenty-three such settlements;* thirteen of these are on rock, six on sand, and one is certainly on clay; the remaining three I do not personally know.

Throughout the district with which we are more particularly concerned, we shall find that narrow bands of clay rarely have villages, and even houses are scarce. Wide areas of clay are thinly populated, whilst on the intermediate formations of sand or limestone villages abound.

The object of this paper, however, is not so much to examine the actual sites of the villages, although we shall see that in certain cases this is a very important point; but I shall endeavour to show that a relation also exists between the boundaries of the parishes to which these villages give their names, and the great physical features caused by the outcropping of certain strata. This relation I shall illustrate by the Chalk area of England as a whole and its immediate border; coming afterwards to describe in greater detail the Chalk and Greensand areas around that district in the south-east of England, which is known as the Weald.

My information as to the parish boundaries is derived from the index to the Tithe Survey, which is the one-inch Ordnance Map with boundaries inserted. Tythings, liberties, etc., when separately marked, are here considered as parishes.

It is manifest that the chief interest of this question lies in the light which it may be supposed to throw upon our early history, and I presume that it is only for this reason that such a paper as this is accepted by the Anthropological Institute. I feel sure that when fully investigated, this subject will give most

* Taking the names as marked upon the one inch Ordnance Map.

important aid in historical research. There is one advantage which the facts I now beg to lay before you have over the great mass of material with which historians have to deal. They are absolutely true, and any error connected with them can only lie in our imperfect interpretation. Mr. Kemble well tells us "how the profoundest science halts after the reality of ancient ages, and strives in vain to reduce their manifold falsehood to a truth."* The historical data which we are now to examine can contain no falsehoods, but only absolute facts, which our forefathers have stamped on the great land divisions of the country. Whilst, however, the chief interest of this question lies in its historical relations, I shall only very briefly allude to this point, but shall content myself with laying the facts before you, leaving their application to others, better fitted than I for this important task.

As the term escarpment is one which I shall often have occasion to use, it may be as well here to give an explanation of it. The word has long been in use in geological works, and by the earlier writers it was employed to denote any hill that had a sharp slope or scarp; but of late years it has acquired a more restricted meaning, and it is now applied only to hills of one particular kind. Mr. Whitaker has perhaps given the best definition of it, as now used: "It may be defined as 'the bounding ridge' of a formation or bed, that is to say, the ridge along which a formation or bed is cut off, and beyond which it does not extend, except in the form of outliers; it follows the line of strike."† Hence we see, that whilst an escarpment is necessarily a hill, all hills are not escarpments.

An escarpment is composed along its whole length of one particular bed or group of beds, and the lower ground at the foot of the escarpment is composed of different beds, geologically lower than the others. In geological language, the beds "dip" into the escarpment, and disappear beneath the beds of which the escarpment is composed, the latter also "dipping" in the same direction. The crest of the escarpment is always the highest ground in the neighbourhood, and from it the country falls gently away to the lower ground, or until another line of escarpment comes on.

As an important point connected with our subject, we may note that escarpments are generally composed of porous rocks, consequently the land upon them is dry. Generally, too, the lower ground at the foot of an escarpment is composed of in-

* "The Saxons in England," vol. i, p. 4.

† "Memoirs of the Geological Survey," vol. iv, The Geology of the London Basin, p. 357. Some sketches of the Chalk escarpment are given in this memoir, and the range of the escarpment is described.

pervious clay, and therefore the land upon it is naturally wet. There are a few exceptions to this rule,* but all the escarpments of which I have now to speak are mainly composed of porous rocks.

In the sections given on plate IV (p. 42), the escarpments of the Chalk, Upper Greensand, and Lower Greensand are shown. A simple inspection of these will give a better idea of an escarpment than any verbal description.

In picturing to ourselves the ancient condition of England, and in endeavouring to restore the characters of its various districts as they existed some twelve or fifteen centuries ago, we are very apt to be misled by relying too much upon the present character of the surface, and the names of certain districts. Thus, as regards the area once covered by thick forest; any good map of England will show a succession of so-called forests along the outcrop of the New Red Sandstone, and we are apt to suppose that the whole of that area was remarkable for its woodlands, and that those we now know are but the remains of the great primeval forest. We should probably obtain a more accurate notion of the ancient condition of the land, if we carefully considered the distribution of the soils, and the elevation, aspect, etc., of the various districts. We should then find that the forest lands of modern England are not those which would have been most thickly wooded centuries ago; generally quite the reverse of this. The parts now known as forests are chiefly those in which the ancient woods were least thick. Fine timber may have grown there, as now, but the underwood and the denser forest growth, which chiefly impede the settlement of a country, would have been less thick there than on the heavier soils.

The tracts now known as forests, are mainly those in which the woodland was least worth clearing; the land lay for a long time in a wild uncultivated state, outside the settled and appropriated land—hence the term “forest.”

We cannot have a better example of this than the Weald. It is well known that the whole of this area was a vast woodland tract—the forest of Anderida; and we often hear that the “forests” of Ashdown, St. Leonard’s, etc., are the remains of the old forest. So in truth they are, but they give us no adequate idea of that old forest; for anyone acquainted with the Weald knows that the sandy land of these districts does not produce a thick crop of underwood—or at any rate so thick a crop as the stiffer lands now under cultivation. The densest parts of Anderida were the

* The Lias, for instance, generally forms a low escarpment around the New Red Sandstone; here the face of the escarpment is composed of shales and thin limestones, the base generally of more porous beds.

clay lands, where only patches of wood now remain. The parts now known as forest were those least thickly wooded.

The present condition of the New Forest is another good example; we see there that the wood grows thickest over the heavier soils. Probably, ere long, these heavier soils, being the best adapted for tillage, will be in great part cleared, and only the light and poorer soils will remain as forest land. But these will give a very false idea of the forest as we now know it.

We may then fairly conclude that the low-lying clayey lands of England were in early times very thickly wooded.

The lighter lands of moderate elevation were probably also in great part covered with wood, but not to so great an extent as the heavier soils, nor were the woods so thick.

England is parted into two great natural divisions, by what is sometimes called the "central plain" of England. On Geological Maps it is represented by the area coloured as New Red Sandstone and Lias. The summit levels of these formations very rarely exceed five hundred feet above the sea, and over most of their area the height of the ground is much less than three hundred feet. There are subordinate ranges of comparatively high ground traversing this area—particularly over the sandstones and conglomerates of the New Red Sandstone; but as a whole, and as compared with the area on either side, it is a plain.

To the west and north-west of this plain, there are the great mountain ranges of England and Wales, formed by the older geological formations—of this district I shall have nothing to say. To the east and south of the great plain there are a succession of hills and smaller plains, which we must now briefly describe.

The Liassic plain is nearly always bounded on the south and east by a bold line of hills, which Geologists term the Oolitic escarpment. The Cotswold Hills are part of this Oolitic escarpment; a great part of the crest is over eight hundred feet in height, and two points exceed a thousand feet. The face of the escarpment is generally exceedingly steep; sometimes, where the freestone of the Inferior Oolite occurs, it is quite precipitous. This, as we shall presently see, is an important point. The face of the escarpment is deeply indented with a succession of coombs and valleys, many of which are thickly clothed with wood, especially beech. From the summit of the Cotswolds (the crest of the escarpment), the ground falls away with a gentle slope to the south. The natural condition of this great plateau or table land is that of open downs, on which enormous quantities of sheep have been fed. Of late years a great change has been coming over the face of the country, and now we find that large areas

are being brought under the plough. In passing from the crest of the escarpment down the "dip slope" of the beds, we sometimes come to rather wet and stiff land formed by some more clayey beds. But in the low ground, forming a well-marked plain or valley, is the far more important wet land of the Oxford Clay. This is separated from the Oolitic country we have just been considering, by a band of limestone, known as the Cornbrash. All through its course this bed is characterised by yielding a rich arable soil. It rarely spreads over any great extent of country, but generally occupies only a narrow band. It is remarkable for the number of villages which are built upon it, and thus it forms a fertile and well populated border to the sterile and comparatively thinly populated Oxford Clay.*

This clay forms a broad band of stiff and wet land largely laid out in pasture. To the south-east of this there is another escarpment formed by the Coral Rag—of far less height than the Cotswolds. Sometimes there is another broad band of clay—the Kimmeridge Clay, beyond this another escarpment of the Lower Greensand, then a band of Gault clay, and finally, overlooking all these, is the great escarpment of the Chalk.

In east Yorkshire the Lower Oolites form even more important features than they do in the west of England, rising to a greater height and spreading over a wider space. This high land is separated from the Yorkshire Wolds by the clay lands of the Vale of Pickering.

Over the greater part of the eastern moorlands of Yorkshire, formed by the Lower Oolitic rocks, there are extensive prehistoric remains, and the same thing occurs over the Cotswold Hills. Contrasting the abundance of such remains over these areas with the absence of them over the clayey districts, and recalling too the fact that the natural soil for thick woodland is clay, we are warranted in concluding that the primitive condition of these high lands did not greatly differ from that which we now observe.

The facts to be detailed in this paper can best be seen by an examination of the Chalk escarpment; we will therefore now describe that.

The Chalk escarpment is one of the best marked physical features in England. It is a steep-sided range of hills, having its summits remarkably level. From the crest of the escarpment the ground falls gradually away with a slope only very little

* These remarks refer to those parts of England where the drift deposits are unimportant or absent. Where the country is thickly covered with drift, the distribution of the population is wholly governed by that, and has no relation to the underlying rock. In the districts to which this paper especially refers, the drift deposits are not of great importance, and do not much obscure the features of the rocks.

less than the dip of the beds. This slope geologists call the "dip slope," the steep face is the "scarp slope." The crest of this escarpment seldom falls below 500 feet above the sea for any long distance, and it only rarely exceeds 800 feet.

At the foot of the escarpment there crop out the beds immediately underlying the Chalk, whatever they may be. Sometimes the Upper Greensand makes a broad terrace at its foot, sometimes, when the Upper Greensand is thin or absent, the Gault clay immediately succeeds.

Everywhere at the foot of the escarpment there is a line of villages, often quite close together. If the Upper Greensand be present the villages generally stand on that. This forms an excellent arable soil, and always yields water to wells sunk through it. If the Upper Greensand be absent the villages stand quite at the base of the Chalk, on the lowest slope of the escarpment, just where this slope is changing into the flatter land of the Gault. Here, on the outcropping of the lowest beds of Chalk, we also find an excellent arable soil, whilst springs break out at the outcrop of the Gault. -

The face of the Chalk escarpment is almost always open land; its slope, sometimes amounting to 30 degrees, is too steep for the plough, but in some places there are traces of terrace cultivation. Patches of wood here and there occur, chiefly of box, juniper, or yew; occasionally there are larger clumps of beech.

Ascending to the crest of the escarpment we find two very different kinds of scenery. Where no drift occurs there is a wide open country, either all covered with a short evergreen turf, or broken up into large arable fields. There is but little wood, and what there is is mostly beech. Villages over this area are mostly found in the long winding valleys, few being met with over the higher ground; but here we find abundance of Celtic remains, hill-forts, tumuli, intrenchments, etc. Where there is a drift-covering to the Chalk we find a good deal of wood on the higher ground, or else the land is in great part under the plough. Here Celtic remains are comparatively rare.

The Chalk commences on the east coast, near Flamborough Head, and forms a bold escarpment, overlooking the Vale of Pickering. Here it runs nearly east and west; but then turns southwards, still presenting a bold escarpment to the west, overlooking the Vale of York. The higher lands of the Chalk are here bare; they are covered with tumuli and intrenchments which have yielded a rich harvest to the labours of Canon Greenwell and others. These high lands are the Wolds of Yorkshire. They are divided from the Wolds of Lincolnshire by the river Humber, and these from the Chalk of Norfolk by the Wash. From the northern part of Norfolk a band of Chalk runs

through Suffolk, Cambridge (Gog-Magog Hills), Herts, Bedford, Bucks, Oxfordshire, Berks, Wilts, and Dorset to the English Channel. This line is broken on the south side of Oxford by the valley of the Thames; for some miles on either side of the Thames the range is known as the Chiltern Hills.

Over the western and the north-western parts of this line Celtic remains occur, and also over the western part of the large area occupied by Chalk where Berkshire, Wiltshire, and Hampshire join. The meeting point of these counties is Inkpen Beacon, 972 feet, the highest point of the English Chalk,* and also the highest point in the south-east of England.

The Chalk of the eastern part of Hampshire is much covered with drift, so too is that of Surrey and Kent; in these places Celtic remains are comparatively scarce. In Surrey most of the Chalk is bare; and here Celtic remains abound.

I have said that everywhere along the foot of the Chalk escarpment there is a line of villages; let us now examine the boundaries of the parishes belonging to those villages. In nearly every case the *parishes ascend the escarpment*, generally taking in a good deal of the table-land above, but occasionally ending off at or near to the crest. In the other direction they extend over the Gault, and more or less over the underlying beds. As the villages are often quite close together the parishes are narrow, and thus we find a long line of parishes along the Chalk escarpment, many of which are remarkably narrow in proportion to their length.†

The points to be especially noticed are: that villages at the foot of the Chalk escarpment send their parishes up the escarpment. This is the case not here and there only, or in special districts, but throughout the whole of the Chalk escarpment of England. Again, where villages occur on the Chalk, near to the escarpment, they very rarely send their parishes down the escarpment; this again is true, not of particular districts only, but of the whole Chalk area of England. Sometimes they extend to the crest of the escarpment, but very rarely do they go down the slope.

We will now turn to the Wealden district and examine the distribution of its border parishes more minutely. To the geologist the Chalk escarpment is the boundary of the Weald. The true boundary of the ancient Weald is somewhat doubtful, probably it was generally the Lower Greensand escarpment.

* Differing only five feet from the highest point of the Lower Greensand, which is at Leith Hill, in Surrey, 967 feet.

† The longer diameter of the parish is along the "dip" of the beds, or at right angles to the "strike;" and thus it is possible to determine the strike of the beds in many districts by a glance at the parish boundaries.

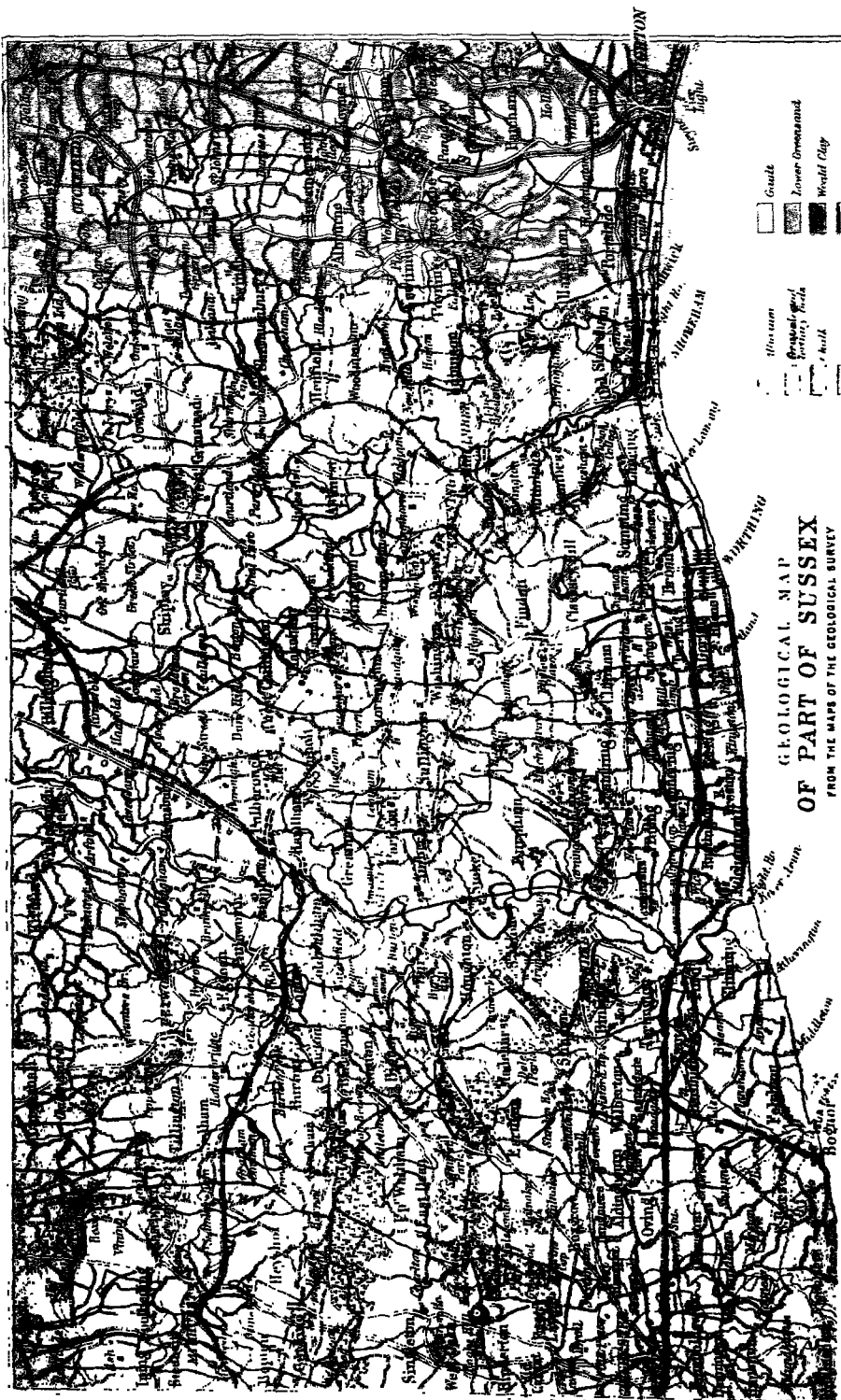
The highest strata of Sussex are those underlying the flat land of Selsea. As we advance to the north from Chichester we find the ground gradually rising, and as gradually exposing lower beds. Soon we enter the Chalk country, which ends, as in the areas already described, in a bold escarpment. The western part of Sussex resembles the eastern part of Hants in being a good deal covered with wood, but the Chalk of East Sussex is mostly in open downs. Along the foot of the escarpment there is a terrace, more or less broad, of Upper Greensand; this generally ends with a small escarpment which overlooks the Gault.

On the true Gault area of Sussex, where it occupies its normal position as a band of flat stiff land below the Upper Greensand, there is only one village, Heyshot, on the south of Midhurst. On the parallel band of Upper Greensand there are no less than 35. In Hampshire the Upper Greensand terrace resembles that of West Sussex, and here too the villages are built on it. Thirteen Hampshire villages are found here, whilst there are none on the Gault.

Through the western half of Surrey the dip is high and the feature of the Upper Greensand unimportant. Through Kent the Upper Greensand is thin, and in some places apparently entirely absent. Still, through these counties the villages occur all along the foot of the Chalk escarpment. In Kent there are 19 in this position, and only 2 on Gault. Perhaps, indeed, only one is really so, for Trottescliffe is built quite at the top of the Gault and partly on Chalk. Brooke, near Ashford, is a remarkable parish. It is wholly on Gault clay, which here spreads over an unusually broad tract. The parish is small, its total population, according to the census of 1871, was only 141; its area is 582 acres. It is the only parish in the Weald that is wholly on Gault.

Taking the Chalk escarpment as the boundary we find that in the whole of the Weald there are 397 towns and villages, of which 73 (or 18 per cent.) are along the narrow band of Upper Greensand or at the base of the Chalk escarpment. In the Wealden district of Sussex (that is, within the Chalk escarpment) there are 176 towns and villages, of which 35 (or 20 per cent.) have a like position. Sussex is therefore in this, as in many other respects, an excellent example of the whole Wealden area.

The Lower Greensand varies much in character, and consequently in the character of the country which it forms. It is important that we should understand this. Generally the land overlying it is light and dry; but there is one division, the Sandgate Beds, which often has a good deal of clay. The towns



GEOLOGICAL MAP
OF PART OF SUSSEX

FROM THE MAPS OF THE GEOLOGICAL SURVEY

and villages on this formation prefer the lighter soil. There are 98 in all, and amongst them are some of the most important towns in the district. In East Sussex the Lower Greensand is thin and makes but a small feature on the ground. In the western part of Sussex it swells out in thickness, occupies a much larger area, and forms a good escarpment. In Hampshire and West Surrey it reaches its maximum thickness, and here its features are well developed.

The highest division of the Lower Greensand, the Folkestone Beds, forms a barren, sandy soil; and throughout its whole length (excepting near Folkestone, where it is slightly calcareous) there is a line of heaths and commons. The most productive part of the Lower Greensand is near the top of the Hythe Beds, and on this many of the villages are built. In West Surrey the divisions are not very apparent, and almost the whole of the formation consists of barren sands. Here it forms a bold escarpment, with a crest varying from 500 to nearly 1000 feet high; the summit being Leith Hill, 967 feet. In East Surrey the outcrop narrows, chiefly in consequence of a higher dip, and the character of the soil improves. Villages and towns here become more frequent, and continue so through the remainder of its course.

Near Maidstone the Lower Greensand spreads over a wide area, through which there runs the valley of the Medway, the slopes of which here form some of the most fertile land in Kent. It is, and probably always has been, well-peopled, for some traces of the Roman occupation are found in nearly every field.

Excepting near Ashford, where the country is somewhat faulted, and in East Sussex, where the beds are thin and soft, the Lower Greensand makes a good escarpment, and it should be noticed that the slope of it is continued for some distance down the Weald Clay, before reaching the flatter ground which generally characterises the latter formation.

To complete our description of the Wealden border, we must not omit to notice the deep transverse valleys, through which the rivers run in their way from the central country towards the sea on the south, and towards the Thames on the north. These carve the Chalk and Lower Greensand districts into quite distinct areas; and this fact is particularly important in Sussex, for all these valleys, as far up as the Lower Greensand, were formerly covered by the sea at every tide; and thus the Chalk area of Sussex would be divided into five distinct divisions, between which communication would be kept up with difficulty.*

* See Colonel Lane Fox "On the Hill Forts of Sussex." *Archæologia*, vol. xlii, p. 30, 1869.

The relations of the parishes to the escarpments cannot well be understood from descriptions alone. As it is impossible in this paper to give maps of the whole of the Wealden area, I have selected one part, the western half of Sussex, to illustrate the general principles.*

Plate III shows the geology of the district. Where the Chalk ends on the north, there is a steep hill—the Chalk escarpment. The northern limit of the Lower Greensand is also an escarpment; low to the east, higher to the west, but always, in this district, of less height than the Chalk escarpment. The Weald Clay is comparatively flat land; the Hastings Beds are hilly.

Plate II shows the parishes classified according to their relations to the escarpments, which relation can be understood at once by comparing this map with the sections on Plate IV. The coloured bars over the sections show the extent of the parishes; these colours are the same as those used on the parish map for parishes having a like position.†

As we have already seen to be the case in other parts of England, so in the Weald, the face of the Chalk escarpment belongs to a parish whose village is at or near the foot of that escarpment; in the map, such parishes are coloured *red*. Generally the village stands on the Upper Greensand. Sometimes it stands upon the Lower Greensand; this is more often the case on the north side of the Weald, where the Upper Greensand is thin or absent.

The parishes coloured *red* are those which do not extend beyond the Lower Greensand area; but where that area is narrow the parishes often extend right across, from the Weald Clay to the Chalk: such are coloured *violet*. As the villages belonging to such parishes are *below* the Chalk escarpment, either on the Upper or Lower Greensand, and as their parishes extend *up* the Chalk escarpment from below, we must reckon these with those coloured *red*; although they will also be included in another class to be considered presently.

Taking then the parishes coloured *red* and *violet*, we find that around the whole of the Wealden area they number 119 (91 of which would be coloured *red*, 28 *violet*). That is to say, that around the Weald there are 119 parishes *ascending* the Chalk escarpment, their villages lying *below* that escarpment.

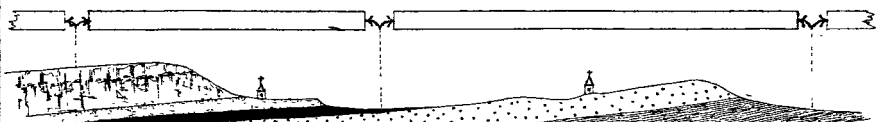
The exceptions to this rule—those in which a village *above* the escarpment, on the Chalk, sends its parish *down* that escarp-

* All the points were fully illustrated, when this paper was read, by the Geological Survey Map and Maps of the Tithe Survey, both of which are on the scale of one inch to a mile.

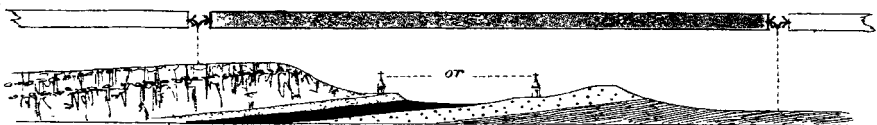
† The same colours are used on the *Geological Map*, but this is only for greater convenience in printing.

DIAGRAM-SECTIONS SHOWING THE RELATION OF THE PARISH BOUNDARIES AROUND THE WEALD TO THE CHALK AND LOWER GREENSAND ESCARPMENTS.

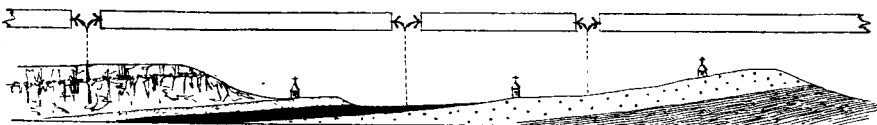
I. USUAL ARRANGEMENT:



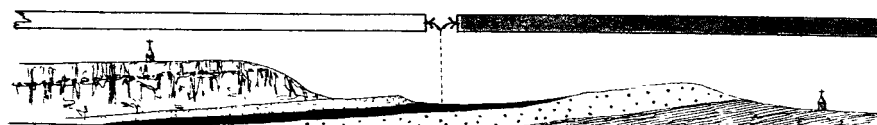
2. WHERE LOWER GREENSAND IS NARROW:



3. WHERE LOWER GREENSAND IS WIDE:




4. ARRANGEMENT WHICH RARELY OCCURS:



 Chalk

 Upper Greensand

 Gault (Clay)

 Lower Greensand

 Weald Clay

A shows the positions of the Villages. The coloured bars above shew the extent of the Parishes; the areas of these parishes are shewn by the same colours on the Map (Plate)

ment—number only 6 for the whole of the Weald. Piecomb is the only example in our map; this is coloured *green*. Froxfield, in Hants, is another exception. The remaining four are along the North Downs; they are Wanborough, Chaldon, Tatsfield, and Hastingleigh. Three of these have some other exceptional character, which may perhaps help to explain the first. The most easterly case is Hastingleigh, in Kent; but it is noteworthy that the part of this parish which forms the crest and slope of the Chalk escarpment is called Brabourne Down. Now Brabourne is a village at the foot of the escarpment close by, the parish of which ascends the escarpment; and it is not unlikely that at one time Brabourne Down was *in* Brabourne parish, for it is very commonly the case along the Chalk, that the “down” bearing the name of any parish is within that parish. If this were so in this case there would be no exception here.

Tatsfield, in Surrey, is the border parish between that county and Kent.* Wanborough is a “liberty” on the Hog’s Back. To the south of the Hog’s Back there is a wide expanse of barren sandy land, which was probably always to a great extent open ground, or only thinly wooded. Mr. Kemble frequently alludes to this district, and points out that many of the names of places here are derived from the names of Saxon gods.† He states that the whole district “seems to have been a very pantheon of paganism;” and of Wanborough he says:—“in all probability it has been in turn a sacred site for every religion that has been received in Britain.”

Where the Lower Greensand area is wide, there are often parishes lying wholly on that formation (coloured *yellow*). There are 53 such parishes in the Weald. The most common

* It is a very remarkable fact, that out of the six exceptions, two are places whose names contain the word *field*—Tatsfield and Froxfield. Limpsfield is a village at the eastern extremity of the Lower Greensand of Surrey, whose parish only just touches the Chalk escarpment. This and the two other places just named, are the only parishes along the Chalk escarpment whose names contain the word *field*. We shall presently see that there are reasons for believing that such names may be of later date than many others in the district.

† “The Saxons in England,” vol. i, pp. 344 and 351. Of the derivations given by Mr. Kemble, that which refers the Hammer Ponds (near Thursley) to Thor is particularly unfortunate. They are ponds belonging to an old iron furnace; such “hammer ponds” are very common in the Weald. Elsewhere he says, “Zahn, whose services to Old German literature cannot be overrated, speaks wisely when he calls the similarity of proper names a rock ‘on which uncritical heads are much in the habit of splitting.’” *Ibid.*, p. 41. With such an example as Mr. Kemble before us, one had need be careful in touching this subject. In subsequent pages of this paper, I have something to say upon place-names in the Weald, as illustrating the main points here discussed; but by avoiding rash theories of my own, and relying chiefly on the authority of Mr. Kemble himself, I hope to have escaped the fate which awaits “uncritical heads.”

arrangement is for the Chalk parish to extend on to or close to the Lower Greensand; beyond this, another village occurs, the parish of which extends *down the Lower Greensand escarpment*. All parishes coloured *blue* are of this kind. Their villages are *above* the Lower Greensand escarpment, but the parishes extend *down* that escarpment. That is to say, the arrangement is exactly the reverse of that which obtains with the Chalk escarpment. There the villages below the Chalk send their parishes up the escarpment, very few villages *on* the Chalk sending their parishes down the escarpment. With the Lower Greensand, on the other hand, the villages on that formation generally extend their parishes *down* the escarpment, and it is only rarely that villages below the greensand (on the Weald Clay) extend their parishes up that escarpment. All such exceptions are coloured *brown*; they are 15 in number.

The number of parishes conforming to the rule as concerns the Lower Greensand escarpment is 60. But to these must be added the 28 which extend from Chalk to Weald Clay; making 88 in all, against 15 exceptions.

Summarising the facts examined, which are illustrated in plate IV, we find that the face of the Chalk escarpment around the Weald is divided amongst 125 parishes; 119 of these belong to villages lying *beneath* the escarpment (figs. 1, 2, and 3), only 6 to villages lying *on* the Chalk above (fig. 4). The face of the Lower Greensand escarpment is divided amongst 103 parishes; only 15 of these belong to villages lying *beneath* the escarpment (fig. 4), whilst 88 belong to villages *on* the Lower Greensand above (figs. 1, 2, and 3).

In seeking for the cause of this apparently strange difference, we must endeavour to realize the condition of the country as it existed when the settlements first took place. Taking again that part of Sussex represented in plates II and III, as an example, we can have but little doubt that the whole of the Chalk area, as far west as the river Arun, was quite open land. To the west of this there may have been, as now, some woodland. The flat land along the coast must have been partly wooded. The face of the Chalk escarpment would be open land. The country between the foot of that escarpment and the foot of the Lower Greensand escarpment would have been very various in character. The more sandy and barren parts would be partly open or only thinly wooded, whilst the better and heavier soils would have in many places a thicker crop of wood; but nowhere over this area would the forest be so thick and impenetrable as over the Weald Clay. The Gault probably produced a dense growth of underwood, but the area covered by this bed is small.

The greater part of the valleys of the Chalk country are

now quite dry, and water is got by sinking wells through the gravels at the bottoms of their valleys. In the extreme west of Sussex there are some valleys in which, after very wet seasons, water now runs; such are in that neighbourhood called "Levants." Similar intermittent streams are frequently found in other Chalk districts. One of the best known is that which occasionally runs in the valley between Merstham and Croydon; this is called the "Bourn." In Kent such streams are called "Bourns" or "Nailbourns;" in Wiltshire and Dorsetshire they are generally called "Winterbourns;" in Yorkshire they are known as "Gypsies" or "Gipsies."*

These streams now only run after unusually rainy seasons; but it is very probable that the rainfall was greater in former times than now, and if so, such streams would have run permanently.† The permanent water-level in the Chalk being higher than now, there would be many springs along the escarpment in places where now there are none, and where water is only obtained by sinking wells through the Upper Greensand.

Bearing these facts in mind, I think we are justified in concluding that the earliest settlements in the south of England would take place along the wider Chalk valleys, in which water could be found, and along the foot of the escarpment, where the settlers found good water, productive soil, and a sheltered situation. In the division of land consequent upon these settlements each knot of settlers would take the down-land behind them on which to pasture their sheep, the good land around the dwellings would be taken under the plough, and the forest-land in the other direction, whether wood or open glade, would afford mast for swine and pasture for cattle.

That these settlements were the first formed and that the land now belonging to them was the earliest appropriated is, I think, evident from the fact that the villages on the Chalk plateau so rarely extend their parishes down the escarpment, as we might otherwise expect them to do, for in this direction they would find the best land. It is not because parishes do not descend hills on which their villages are built, for we have seen that in the Weald the villages on the Lower Greensand generally do send their parishes down the Greensand escarpment. In this matter the Chalk and Lower Greensand escarpments act exactly the reverse of each other.

Later settlements within the Weald necessarily took place further in, that is to say upon the Lower Greensand. In the

* The G is pronounced hard.

† See remarks to the same effect by Col. Lane Fox, on p. 47 of the paper already quoted.

division of land consequent upon these later settlements, the boundaries were already roughly formed in one direction, that is towards the Chalk escarpment. In the other direction, towards the centre of the country, the land was all unappropriated, and in this direction the settlers extended their land. Probably it is mainly to these later settlements, which first penetrated the forest, that we owe the large number of names within the Weald ending in *den*, *fold*, *field*, *hurst*, etc.

The distribution of local names having such terminations has been studied by Mr. Kemble, Mr. Taylor, and others. The full significance of the facts, however, only comes out when we study them in connection with the physical divisions of the country.

In the table here given, the names within the Weald are grouped according to the geological formations upon which they occur. It will be seen how these names swarm upon the Weald Clay and Hastings Beds, that is to say, in the district bounded by the Lower Greensand escarpment; and how rare they are upon the Lower Greensand, and at the foot of the Chalk escarpment.*

It is just this district in which they so thickly occur that is generally known as "the Weald." The ancient forest of Anderida probably had the same limits, though the boundary of this is doubtful; but to the west it probably extended, in a less dense condition, over Hampshire—here too there are many *hursts*.

The distribution of the *dens* is very remarkable. They occur most thickly in the eastern part of the Kentish Weald, and diminish westwards, comparatively few being met with on the Weald Clay west of *Marden*. On the Hastings beds they continue in force further west, but there is still a marked decrease in that direction. At the extreme south-western corner of Kent there is *Bearden* Farm; but on the west of this, through Surrey, not a single case occurs on the Ordnance Map.† *Dens* are very rare on the adjoining Weald Clay of Sussex; here, and on the Weald Clay of Surrey, they are apparently replaced by *folds*. There are more *dens* on the Hastings beds of Sussex, increasing in frequency as we approach the Kentish border.

* In this table (which is constructed from the names given on the Ordnance Maps) all place-names, whether villages, hamlets, or farms, are taken as of equal value. It should be remembered that the areas of the formations are of unequal size in the different counties. Surrey has only a small piece of Hastings beds, Hampshire has none, and only a very small area of Weald Clay. If the object of the table were to show the relative numerical distribution in each county, it would be necessary to calculate the percentage according to area.

† There is *Dean Farm* close by the railway, 2½ miles north of Horley; this is in a slight hollow, close by the stream. There is *Jardens Farm* on the south-east of Capel; but this seems to derive its name from a former owner. It is moreover on the border of Sussex.

SUMMARY OF THE NAMES OF PLACES in the Weald (within the Chalk escarpment), ENDING IN

	- <i>hurst.</i>						- <i>den.</i>						- <i>field.</i>						- <i>fold.</i>						TOTAL OF NAMES (<i>hurst, den, field, fold</i>) in Wealden part of County.
	Base of Chalk Escarpment and Upper Greensand.	Gault.	Lower Greensand.	Weald Clay.	Hastings Beds.	TOTAL FOR COUNTY.	Base of Chalk Escarpment and Upper Greensand.	Gault.	Lower Greensand.	Weald Clay.	Hastings Beds.	TOTAL FOR COUNTY.	Base of Chalk Escarpment and Upper Greensand.	Gault.	Lower Greensand.	Weald Clay.	Hastings Beds.	TOTAL FOR COUNTY.	Base of Chalk Escarpment and Upper Greensand.	Gault.	Lower Greensand.	Weald Clay.	Hastings Beds.	TOTAL FOR COUNTY.	
KENT (S. and S.W. part)	...	...	3	25	20	48	...	2	8	52	42	110	...	...	5	1	4	10	...	...	...	...	2	2	170
SURREY (S. part) .....	...	...	3	31	...	34	...	...	1	...	...	1	...	...	2	14	2	18	...	...	...	9	9	62	
SUSSEX (N. and N.E. part)	2	...	7	45	58	112	...	...	2	2	34	38	...	...	2	24	30	56	...	...	...	23	3	26	232
HANTS (E. part)	1	...	...	...	...	1	...	...	...	...	...	...	2	...	1	2	...	5	...	...	...	...	...	6	
Total for Geological Formations	3	...	13	101	78	195	...	211	54	82	149	149	2	...	10	41	36	89	...	...	...	32	5	37	
Total for whole Wealden area.....	...	...	...	...	...	195	...	...	...	...	...	149	...	...	...	...	...	89	...	...	...	...	...	37	470

There are some *deans* and *dens* on the Sussex Chalk; the former are apparently always *in valleys*. Of the *dens*, there is one (Finden) in a broad valley north of Worthing. There are four Mardens near the western boundary of Sussex; they are partly on high ground, and are on that part of the Sussex Chalk which is now in great part wooded, and which was probably more wooded formerly. According to Lower, however, these places are misnamed.* Finden is the vulgar pronunciation of Findon, its proper name; in "Domesday" it is written Findune. The Mardens are in "Domesday" Merdon.† Very few of the Kentish dens are found in "Domesday," but what there are appear as den or dene. These places on the Sussex Chalk are therefore not *dens* at all.

With regard to such names, Mr. Kemble says, "In looking over a good county map we are surprised by seeing the systematic succession of places ending in den, holt, wood, hurst, fold, and other words which invariably denote forests and outlying pastures in the woods. *These are all in the Mark*, and within them we may trace with equal certainty the *hams*, *tuns*, *worðigs*, and *stedes*, which imply settled habitations. . . . I will lay this down as a rule, that the ancient Mark is to be recognised by following the names of places ending in den (*neut.*), which always denotes *cubile ferarum*, or pasture, usually for swine."[‡]

It is doubtful if so much information as is here supposed, can be obtained from the study of local names alone; even in Kent, where the dens occur most frequently. There can be little doubt, however, that Mr. Kemble has here given the correct meaning of the termination *den*, whilst those who regard it as indicating a wooded *valley* are most certainly wrong. Many of the villages having such terminations are on the tops of hills. It should be noted that, whilst the villages of the Hastings Beds are generally on sand, some of these dens have Clayey sites, as Bennenden and Rolvenden; Tenderten is in great part built upon a Clay bed (Grinstead Clay), which occurs in the Tunbridge Wells Sand.

These dens, folds, and fields we then find to be especially characteristic of the interior of the country, which we suppose to have been the latest settled. But near the foot of the Chalk escarpment, and over the Chalk country of Sussex generally,

* "History of Sussex;" vol. i, p. 177; vol. ii, p. 217; "The group of villages called 'the Mardens,' lies on the Downs, and its derivation from the Saxon *mor*, a waste heathy land, and *dun*, a hill, answers to the geographical position and ancient state."

† Hussey prints it Meredone, "Churches of Kent," etc., p. 179.

‡ "The Saxons in England," vol. i, p. 480. Mr. Kemble's ingenious theory of the "Court of Dens" at Aldington, is discussed and rejected by Mr. Furlley, in his "History of the Weald of Kent." 1871.

there are names of another class, of even greater interest. These are the names containing *ing*, which are as abundant on and near the Chalk, as the dens and folds are in the central country.

Mr. Kemble regards these as indicating the family settlements of the Teutonic invaders. He also distinguishes between those names in which *ing* is the final syllable, and those in which it is supplemented by *ham*, *ton*, etc.; regarding the former as the original settlement of the family, the latter as offshoots from earlier settlements of the same family.* According to this theory the Folkingas would originally have settled at Folking, a hamlet at the foot of the Chalk escarpment, in the parish of Edburton; an offshoot from this would have settled at Folkington, near Eastbourne, also at the foot of the Chalk escarpment.

This theory fits perfectly with that advanced in this paper; that the settlements on and immediately surrounding the Chalk are the oldest. All along the foot of the Chalk escarpment, names in which *ing* is the final syllable abound; they also occur near the coast, but they are rare upon the Lower Greensand, and are almost unknown in the interior of the Weald.

Mr. Taylor adopts Mr. Kemble's theory, and illustrates it by tabulating the "original settlements," and the "filial colonies" in the various English counties. He shows that the proportion of the former to the latter is greatest in the east and south-east of England; whilst in the west, north-west, and north of England, original settlements are exceedingly rare.†

This is as it should be; but in order to establish this theory, it is necessary to show that the greater number of the filial colonies have names which are also found amongst the original settlements. This has not been done; and I doubt if the attempt to do so would be very successful. Certainly in the south-east of England there are a large number of filial colonies which cannot be referred to any known original settlement; whilst, as of course follows from this, there are but few original settlements from which filial colonies can be traced.

Mr. Taylor has drawn attention to the fact that in that part of French Flanders which is nearest to the Weald, there is an abundance of English names; this he illustrates by a map, in which the position of each such name is marked. In this district, lying between Calais, St. Omer, and Boulogne, there are 22 names ending in *ton*; more than 100 ending *ham*, *hem* or *hen*; and also more than 100 containing the syllable *ing*. He also gives a list of names in that district which are likewise found in England; showing that "the same families which gave

* *Loc cit.*, p. 479.

† "Words and Places," 3rd edition, p. 86, 1873.

their names to our English villages, also made a settlement on that part of the French coast which lies within sight of the English shore." "Again, if any importance is to be attached to Mr. Kemble's theory of original and filial settlements, the Saxon villages in France must all have been *filial settlements*. We find that *ing* is never a mere suffix; in every case it forms the medial syllable of the name."*

Mr. Taylor shows that such names are absent along the coast north-east of Calais, and also in the inland country to the east. From these facts he infers that this part of France was *settled by colonists from England*. Whatever may be the value of this theory, I may mention, as additional evidence in its favour, that some of these Flemish names (all of which are of filial colonies) can be referred to original settlements in the south-east of England:—as Bazinghen, Berlinghen, and Halinghen, to Basing, Birling, and Halling.† Others still survive amongst us as surnames:—as Hardingham, Maninghen, and Waringzelle, in Harding, Manning, and Waring.

The district in question is geologically a continuation of our English Weald. It is divided by the Chalk escarpment into two areas:—Le Bas Boulonnais, below the escarpment, which corresponds to the Weald; and Le Haut Boulonnais, which includes the Chalk country.

It is a curious circumstance that the boundaries of the Communes in the Bas Boulonnais have the same relation to the Chalk escarpment as have those of the parishes in England. There is a line of villages at the foot of the escarpment, and the Communes belonging to them extend up the escarpment; whilst the Communes whose villages stand above the escarpment, on the Chalk plateau, do not descend that escarpment.

This paper might be greatly prolonged by giving illustrations of other lines of English escarpments. We must, however, be content with the following remarks. First, it should be noticed that where the features of a country, from special geological causes, somewhat resemble escarpments, the village and parish boundaries act in regard to these features as they do with the escarpments.

The Mendip Hills rise steeply from the comparatively low ground around, and form a feature of even greater importance than many escarpments. The high land of the Mendips was always open land, like the Chalk; whilst much of the low

* *Loc. cit.*, pp 87-90.

† Possibly also Pelinghen to Poling. I take the spelling of these names from the French Government Map; the boundaries of the Communes are marked on that.

ground around was covered with wood. Along the foot of the Mendips there is a line of villages whose parishes extend up the hill behind.

On the west of Basingstoke, the Chalk rises steeply from beneath the Tertiary beds which occupy the lower ground. At the foot of the Chalk hills there are villages which send their parishes up and beyond the hill.

The Oolitic range of Lincolnshire affords an example strictly parallel with that of the Chalk escarpment.* Lincoln Heath is a wide tract of sandy land overlying the Inferior Oolite. Sixty years ago it was nearly all waste land, but it is now one of the best tracts of arable land in the district. It runs in a due north and south direction, and is divided into two nearly equal parts by the river Witham. Nearly along the crest of the hill runs the Ermine Street. The ground falls gradually to the eastward, but on the west there is a steep-faced escarpment called the Cliffe or the Cliffe Row. This escarpment is breached by the River Witham, and at the gap stands the city of Lincoln. At the foot of the escarpment a long line of villages occurs. The parishes of these villages are long narrow slips of land, running generally into marsh land on the west, or over the pasture land of the Lias; but on the east they all mount the escarpment, most of them running right up to the Ermine Street and there abruptly ending.† Here it is plain that the settlements were determined by the outcropping of a water-yielding stratum and land fit for arable culture along the foot of the escarpment. On the west there would be wood and pasture over the lias, on the east there would be rising open land.

The Cotteswold Hills (the Inferior Oolite escarpment) were probably, like the Chalk, always in great part open land. This escarpment resembles that of the Chalk, in its relation to the parish boundaries. Villages below send their parishes up the escarpment, and sometimes over the ground beyond. But in many cases the escarpment is the boundary; this happens where the crest is very steep, and sometimes it is almost inaccessible.

The Coral Rag, in Oxfordshire, Buckinghamshire, etc., acts, as regards parishes, much as the Lower Greensand does in the Weald.

With regard to the date at which the settlements in the south-east of England occurred, there appears to be nothing

* I have to thank my friend and former colleague, Mr. J. W. Judd, for calling my attention to this interesting case.

† Roman roads are very frequently the boundaries of parishes in the south of England. In the north of England, where parishes are large, these roads are seldom parish boundaries, but they are sometimes the boundaries of townships.

to guide us. We know that the boundaries of many of the Wealden parishes were not finally settled until the century after the Norman Conquest, when the see of Chichester was removed thence from Selsea.* We also know that the Weald proper could not have been much occupied at the time of the compilation of Domesday Book; for although many manors are described as partly within the Weald, not many places are mentioned which are now wholly within it.† We seem to have a limit as to time in the other direction; for by far the greater number of names, even of the earliest settlements along the Chalk escarpment, are eminently English.

In speaking as I have done of the probable relative date of the various settlements and their parishes, I of course do not mean that our parishes date so far back. The date at which most of these were formed, and even whether they were originally civil or ecclesiastical divisions, are questions which are all involved in doubt, and I do not pretend that this investigation throws much light directly upon the subject. Still, I think it does give a little. If parishes or manors were ever formally planned out, it seems in the highest degree unlikely that such striking agreement with the physical features as we have seen to exist, should occur. Probably such features would be altogether ignored; or if taken into consideration would be seized upon as *boundaries*. One could scarcely desire a more striking physical feature for a boundary than the Chalk escarpment, but we have seen that it is only in rare cases that this forms the boundary of a parish; generally it is well within the parish, which stretches up to and often far beyond it. The boundaries cross the escarpment; in nine cases out of ten at right angles to it. So again with the Lower Greensand escarpment; although in its relation to the parishes it acts exactly the reverse of the

* Dallaway's "History of Sussex," vol. i, p. 51. As good evidence of the comparatively recent date of places in the Weald, I may mention that names ending in *ford* are almost unknown, whilst there are plenty of *bridges*.

† It has been suggested, with great probability, that the Surveyors of Domesday did not pay much attention to the interior of the Weald, and therefore the fact that but few places are there mentioned is no evidence that many others did not exist. No mention is made of the Wealden Iron-works, although they existed long before and long after the Norman Conquest, and it is exceedingly unlikely that the trade would have been discontinued for a while.

It is probable that the Norman Conquest had but a small effect upon the interior of the Weald, although the great battle was fought within it. The dialects of Sussex are almost pure Saxon, and some of the small landowners claim to have had their land in possession of their own families from before the Conquest. Quite recently I had a Geological tour in the Weald with Mr. Bristow and Mr. Drew, and we were much struck at hearing a Sussex labourer speak of the Conqueror as "Duke William;" and this within sight of Senlac.

Chalk escarpment, yet they agree in rarely forming parish boundaries.*

It will be most important to ascertain what relation the manors and other recognised land-divisions (when they materially differ from parishes in area) have to the features here described. In the Weald, at least, I believe that the results will be the same as those at which we have arrived. Manors, farms, etc., so far as one can judge, act as regards the Chalk escarpment, in the same way that the parishes do. When situated at the foot of the escarpment, they extend up its slope, and also take in some of the arable and pasture land of the Upper Greensand and Gault.

It is, however, very difficult to obtain the data necessary for working out this question fully. It is useless to attempt to generalise in such matters from a limited area; and for this reason I have taken the parishes as the basis, the boundaries of these being readily obtainable.

In Sussex the simplest parishes, or those in which the manorial and parochial boundaries most nearly coincide—whether there be one or several manors—are in those districts where we may infer the land divisions to be the oldest; whilst the more complicated parishes are in the central parts, where we infer the land divisions to be the most recent, and where we know that the parochial divisions certainly are so.†

It was long ago pointed out by Blackstone, that “it very seldom happens that a manor extends itself over more parishes than one, though there are often many manors in one parish.”‡ He infers that the manorial divisions are the oldest, and that

* Watersheds are very often boundaries in the north of England, and any remarkable stone or other natural object is also taken as a boundary mark. The lines over the moorlands are still in many places undefined, excepting by these occasional objects; but boundary stones or stone walls are now very commonly placed along them. Many years ago there were but few of these, and the boundaries were handed down by tradition. It was then the custom for each person entrusted in the matter to be taken over the ground when young, and to him was pointed out by old shepherds and others the boundary lines which they had received by tradition from their fathers. It would be his duty in after years to hand on the same traditions to the next generation. The annual custom of “beating the bounds” of the parishes in the south of England is an useless perpetuation of the same proceeding.

The areas of the various properties in the north of England were often erroneously estimated. The accurate measurements of the Ordnance Survey have proved that the moorlands belonging to a large landowner near the borders, are less by some thousands of acres than has always been supposed.

† It very often happens that parishes have detached portions lying at some distance from the main mass. The parishes along the Chalk border often have such outlying patches *within* the Weald, but it is remarkable that very few parishes within the Weald have outlying patches on the Chalk. Of the villages on Weald Clay or Hastings Beds, only two, Lynch and Chailey, have such detached portions.

‡ “Commentaries,” vol. i, p. 112, of Ed. 1809.

parishes were formed from them, either by taking one manor only, as is sometimes though rarely the case, or by grouping several.

The word manor was introduced by the Normans, but the divisions of land to which it was applied must have existed at a much earlier date; indeed it is probable that but few changes took place in the recognised divisions of the land at the Conquest.

For the original unit of the land divisions we must, then, go still further back. Is it not probable that in what we consider to be the earlier settlements at least—with their arable, down, pasture, and woodland—and preserving so often their antique names, we have the sites of the original Mark?

Mr. Freeman regards the modern parish or manor as the representative of the Mark; and he looks upon the parishioners assembled in vestry as equally representing the assembly of the Markmen.*

Tempting as this view of the subject is, this is not the place to pursue it further. I am content to have shown, as it appears to me beyond all dispute, that the land divisions of the south-east of England have a well-marked and constant relation to the great physical features; a relation which cannot possibly have been the result of accident. From this relation we may safely infer that whatever may have been the origin of manors or parishes, as such, they both depend upon older divisions of the land, which were not formed by the arbitrary act of Church or King, but resulted necessarily from the great physical features of the country.†

* "History of the Norman Conquest," vol. i, p. 104; and "Growth of the English Constitution," 2nd ed. (1873), pp. 10 and 60. In the opening pages of the latter work, Mr. Freeman, in a passage which is remarkable even amongst his writings for its beauty and power, gives an account of the yearly meeting of the people of Uri and Appenzell to frame laws and to choose rulers. He sees in these gatherings the exact counterparts of the assemblies which, in early times, would have met for the same purpose in such districts as Holderness or Cleveland; districts in which several Marks would be included.

† In addition to the authorities already referred to, I may here mention the following, in which the Mark and its modern representative are discussed:—

E. Nasse, "On the Agricultural Community of the Middle Ages, and Inclosures of the Sixteenth Century in England" (1869). Translated by Col. H. A. Ouvry, 2nd Edition, 1872. See p. 14 especially; but the whole of the work contains most important information bearing upon this subject. Frequent references are given to English authors.

R. B. D. Morier, "The Agrarian Legislation of Prussia during the Present Century." In the Essays published by the Cobden Club on the Systems of Land Tenure in various Countries. 2nd Edition, 1870.

Sir H. S. Maine, "Village Communities in the East and West," 1871. Lectures iii.-v.

The divisions of the country are described, and their history discussed, by Mr. J. Lewis in his "Digest of the English Census of 1871" (1873), pp. 14-22. Canon Greenwell, in the "Durham Chronicle," during Sept. 1869, printed

DISCUSSION.

Dr. CLEMENT LE NEVE FOSTER, referring to some previous remarks by Mr. Charlesworth, said:—As Mr. Charlesworth does not seem to have fully understood the point of Mr. Topley's paper, I rise to say that I think the author made everything very clear, to some of his audience at least. The idea that I gathered from the paper just read is, that the first inhabitants of the Weald, on choosing land for their settlements, took strips of various formations to suit their various wants. They wanted a position where water could be easily obtained, so they placed their villages at the foot of the Chalk escarpment, where springs are met with. They required bread and meat for food, and fire to cook it, so each village took its slice of Chalk for pasture land, some of the Upper Greensand for arable land, and a strip of Gault for woodland. When these formations were all occupied, other settlers chose the best land they could find on the Lower Greensand, Weald Clay, and Hastings Beds.

Mr. HYDE CLARKE said that the parish divisions of themselves were relatively modern and casual, as they had been disturbed by the addition or abstraction of portions of the neighbouring lands. Nevertheless, the valuable facts laid before them by Mr. Topley could not be without reference to that important question of dispute, whether Britain was or was not bodily invaded, conquered, and occupied by the English, or whether the present state of affairs was a simple continuation of the Roman occupation. The pre-historic and the Celtic periods might be dismissed from the present consideration, as they had been disturbed by the Roman occupation. This occupation must at least have been as close as that of the early English. In the south of England the parish generally coincided with the township, and the township, from the extraordinary details recorded by Mr. Topley, probably coincided with the *mark* or *gau* of other Germanic countries, in conformity with the views of Mr. Kemble. These long narrow strips starting from the natural boundaries (without intentional compliance with geological features), or from the artificial boundaries of the Roman roads, would represent the allotments among the invading parties. The position of villages signified little, for there were many hamlets in a parish, and where the church was placed there would afterwards be the thickest population or village. Where there was a

two deeds of the end of the 12th century: a Conveyance of Land and a Lease, relating to Durham. He has given an introduction and notes to each, which contain a great deal of information upon the condition of the country at that date.

The Municipal and Ecclesiastical Theories of Parishes are discussed by "An Hereditary High Churchman," in a pamphlet entitled "The Parish in History and in Church and State," reprinted from the "Church Review," 1871. This pamphlet was noticed in the "Saturday Review," and in the same periodical there was an earlier article on Local Government, both giving much information upon these subjects. Unfortunately I have mislaid these articles and cannot give the references.

On the Early Physical Condition of England, see Mr. C. H. Pearson's "History of England," vol. i, chap. i, 1867; and the same author's Historical Maps.

Roman well or settlement, that seemed to be a preferable situation for those entitled to selection. The old towns appeared to be awarded to chiefs. He thought, rather, that in most cases the churches had been placed at the *ton*, or stronghold, of the chief of the allotments. While the other homesteads were scattered, these strongholds side by side constituted lines of defence. The allotment could scarcely be, as assumed by Mr. Topley, to get a portion of each class of land for the village, because there was originally no village, and the other homesteads were scattered. It would be necessary to examine carefully the relative evidence of the Germanic allotments in the other conquered countries, and Flanders should not be omitted. Mr. Topley had referred to the opinion that the Boulonnais had been conquered from England, but he (Mr. Clarke) was inclined to suggest from the evidence of names, that while the main stream of the English and the Saxons poured from Jutland, across the North Sea, to Kent, Surrey, Middlesex, Essex, the East Angles, Lindsey and Northumbria, another stream passed by North Dutchland and Flanders, and settled in Wessex and probably Sussex. He pointed out that in Flanders there were many peculiarities of name, distribution and language. An archæologist had mapped out the distribution of dialects, which had been better preserved there than here, and this coincided with the condition that there had been an occupation by men of various tribes, among whom the land was apportioned.

Mr. FRANKS remarked that a subject of somewhat analogous nature had lately occupied the attention of the Anthropological Society of Berlin, being a communication from Herr Meitzen, printed in the "*Zeitschrift für Ethnologie*," 1872, *Verhandlung*, p. 134, with plans of villages and peasants' lands, showing what important ethnological conclusions can be drawn from the various dispositions of boundaries.

Mr EDWARD CHARLESWORTH exhibited two tusks of an existing African elephant, identical in form with those of the extinct mammoth.

The PRESIDENT remarked that since the tusks were said to come from Africa, they could not in any way be connected with the Mammoth. Had they, however, been Asiatic, there would have been nothing very surprising that they should present the form, more or less nearly, of the tusks usually observed in *Elephas primigenius*, which is undoubtedly at the present day represented by *El. Indicus*, if there be really any true specific distinction between them. It was impossible, he thought, to entertain the idea that the true Mammoth or hairy elephant was living down to the present day, and most certainly it would not be found in Africa.

The meeting then separated.

MARCH 4TH, 1873.

Professor BUSK, F.R.S., *President, in the Chair.*

The minutes of the last meeting were read and confirmed.

The following members were elected: EDWARD WILLIAM COX, Esq., Serjeant-at-Law, 36, Russell Square, W.C.; CHARLES AUGUSTUS HOWELL, Esq., F.S.A.L., C.E., North End, Fulham, S.W.; PHILLIP HARDWICK, Esq., F.S.A., 21, Cavendish Square, W.; ROBERT B. HOLT, Esq. F.R.S.L., Homefield, Bromley Common, Kent.

The following presents were announced, and the thanks of the meeting voted to the respective donors:—

FOR THE LIBRARY.

From the EDITOR.—Archivio per l'Antropologia e la Etnologia, vol. ii, No. 4, 1872.

From the EDITOR.—La Revue Scientifique, No. 35, 1873.

From the SOCIETY.—Actes de la Société d'Ethnographie, No. 25, 1873.

From JAMES BURNS, Esq.—Human Nature, for March 1873.

From the Executors of the late H. CHRISTY, Esq.—Reliquiæ Aquitanicæ, Part xi, February 1873.

From the EDITOR.—Nature (to date).

FOR THE MUSEUM.

From Consul T. J. HUTCHINSON.—One hundred and forty Peruvian skulls, with pottery.

From Dr. ROBERT PEEL.—Skeleton of an Australian.

Mr. WM. TOPLEY, F.G.S., exhibited a series of stone implements which he had collected from the surface soil in various parts of England, France, and Spain.

The following paper was read by the author:—

On the LOOSHAI. By Dr. A. CAMPBELL.

HAVING served many years on the northern frontier of Bengal (*i. e.*, in Nipal, Sikim, and Bootan), where tribes and tongues are exceedingly numerous, and where the physical characteristics of the population are considerably varied, my attention was long ago directed to these peculiarities in detail, and I have helped in some degree to bring them to the notice of the public. Naturally enough, while living long and intimately with some group

of Indian frontier tribes, I have also been exceedingly interested in whatever has, from time to time, appeared in connection with other groups in other portions of that immensely extended line of border lands, stretching as they do for about 3,000 miles from Kurachee on the west north to Cashmere, thence eastwards and southwards to Sudyā in Assam, and south to Singapore.

It has, therefore, occurred to me, although I have not lived among the Looshais, that a notice of this Tribe, with which we have most recently come into hostile collision, may be acceptable to you, particularly as it will be derived from the most authentic sources, and as the accounts we now have of them show them in a very different and much more favourable light than they were known to us before. Besides this it appears to me that a notice of the Looshais comes appropriately in continuation of Mr. St. John's paper on the Wild Tribes of Northern Arracan, and Major Godwin-Austen's papers on the Garrows and on the Khassias, which have been read to the Institute within the last year, and with which the Looshais are akin and intermixed.

Through these papers our knowledge of the tribes of this portion of South-Eastern India has been considerably augmented.

We have, as you see on the map, a large collection of tribes in this locality, and they are quite as much of mixed blood, as in all other parts of our northern frontier, where it is almost impossible to isolate any one tribe in physical characteristics, language, religion, or customs, so much are they intermixed and mingled with one another. Here we have the blood of Burma and the Malay peninsula from the east, the Mongolian and Tibetan characteristics from the north, and those of the aborigines of India from the west and south, to make up the local tribes above alluded to and many others.

The Looshais being described very fully by Captain Lewin in his "Wild Races of South-east India," it will be sufficient on this occasion to give a summary of their most marked peculiarities in social and domestic habits, to which will be added what is really new regarding them, and what could not have been known until their raids on our subjects had been so violent and frequent that the Indian government was compelled to fit out an expeditionary force to enter their country, with a view of inflicting punishment, if possible, on the raiders, and of procuring security against further murderous incursions. The immediate cause of the Looshai campaign will be in the recollection of all present. Just at the moment that our political agent, Mr. Edgar, had reported to the Bengal Government, early in 1871, that he had after months of trouble succeeded in effecting an arrangement with one of the most influential of the Looshai chiefs, by which our subjects would be secured from future attacks and

our frontier from hostile inroads, a horde of Looshais burst upon the British province of Cachar, murdered and beheaded a number of coolies employed in the tea plantations, and carried off the daughter of Mr. Winchester, one of the tea planters of the district. Hence the campaign. The "Looshais" were best known to us for a long time in India under the denomination of "Kookies," and it is even now not quite clear how far the terms are properly commutable, or should be used to designate separate tribes, or the divisions of one tribe.

They inhabit the hill tracts of Chittagong and those adjoining that British province, whence they extend north and north-east until they reach Cachar on the one hand and the frontiers of Burmah on the other. They form one of the numerous tribes generically known as the "Toungtha" as children of the hills, and thus distinguished from numerous other tribes in the same direction, generically known as the "Khyoungtha" or children of the river. The latter in their purity belong to Arracan, speak its ancient dialect, and are Buddhists; the former are a mixed race, speaking various dialects, and do not profess the Buddhist or Hindoo religion. Captain Lewin in his account published in 1870, divides the Looshais into three classes, the Howlong, Sylloo, and Rutton Poiya; but as will presently be seen, this may not be quite correct. On the accurate denomination of the Looshais, as well as on the correct terms of their division into classes, the Lieutenant-Governor of Bengal in a Minute, dated 18th May, 1871, says:—

"I have had very great difficulty in getting at the true meaning of the words Kookee and Lushai. Indeed, the only fact that can be ascertained, is that these words have no very definite meaning, but that 'Kookee' is the larger word of somewhat wide applications, while 'Lushai' is a more restricted term; all Lushais being Kookees, but not all Kookees Lushais. After much enquiry and cross-examination of all the officers who know these tracts, I am satisfied that the people whom we call Lushais, and who occupy the country above described, between Chittagong on the south, Cachar on the north, Hill Tipperah on the west, and the country which the maps may lead us to call Burmah or quasi-Burmah on the east, are in fact a homogeneous people, speaking a common language, and bound together by ties of consanguinity, and relations of marriage and murder, peace and war, and other social intercommunications. The Lushais have also relations of this kind with other Kookees living in Tipperah, Sylhet, Cachar, and Munnipore, but not to the same extent. The nature of the eastern boundary of this tract is not very clear; but this seems to me to be established, that it extends but little, if at all, east of a line drawn from the eastern boundary of Chittagong to the

western boundary of the Munnipore valley. It is established in my view, by the evidence of Mr. Edgar and others, that the people east of those of whom we have information, that is, east of the families of Vonpikal and Vonolel, are known to the Lushais as 'Pois', *i. e.*, strangers, foreigners, barbarians, a people with whom they have comparatively little intercourse. Only one family of Kookees, called Soktees, live east of this line, and they are not very nearly allied to the Lushais. Possibly there may be some natural barriers even more considerable than in the Lushai country. The hills to the east seem to be higher. Pines are said to grow on them. The belief seems to be that, speaking roughly, Kookees, including Lushais, occupy the countries draining to Chittagong and Cachar; and tribes foreign to them, the countries draining to the Irawaddy.

"Lushai-land seems to be a tract not exceeding one hundred miles in length from north to south, and say fifty, sixty, or seventy miles in breadth from east to west.

"Within that tract, among this people called Lushais, I cannot find that any real tribal subdivision exists. The chiefs hold a family rank quite above that of the common people, and they seem to be related by a not very remote affinity, as well as by marriage. The people seem to be not so much tribes as followers and subjects for the time being of particular chiefs, or of mothers and sisters of chiefs having appanages of their own.

"Clearly, among the Lushais with whom we are familiar, either on the Cachar or the Chittagong side, there are no proper tribal divisions; and it is more than doubtful whether the Howlongs and Syloos, whom we do not know, will be found to bear a tribal character.

"I find that the words 'Howlong' and 'Syloo' are sometimes used as the names of tribes, sometimes as the names of men, sometimes as the names of places; and both are marked on the map as the names of mountains, the exact height of Howlong being given."

On the above I venture to remark that this difficulty of accurately ascertaining the extent and nature of tribal divisions is not peculiar to "Looshai-land", but general, I believe, all along our Indian frontiers. What *is* a "race", what a "tribe", what a "clan", in Indian ethnology? We greatly want a common understanding on the use of these terms. One section of the population of Nipal, the Limboos, is divided into more than fifty tribes or clans, some of them named after valleys, hills, rivers, etc., so that the Howlong mountain, after all, may have led to that tribal distinction of the "Looshais".

The Looshais are fairer in complexion than the people of the plains; their features resemble the Malays more than the Tartar-

faced people of Munnipore, and their voices are described by Captain Pemberton as remarkable for extreme softness, and their language for euphonic sweetness, compared with the harsh and guttural dialects of the Tartar races to the north of them. They dry and preserve their dead; they have no distinctions of caste, all eat and drink together, marriage is a civil contract, dissoluble at the will of the parties concerned, and there is no prohibition against the marriage of widows; the intercourse between the unmarried of both sexes is unchecked, but not so after marriage. The men are generally beardless, but not invariably so, and live by hunting and marauding, while the cultivation, all household work, carrying of loads, etc., is done by the women. They live in log houses on the ridges of hills, and know enough of iron working to make spear heads and fish hooks—nothing more.

Hitherto the Looshais have been known to us only as a savage and murderous race. It is a century (time of Warren Hastings, 1770), since they were so denounced; and under the name of "Kookees" they have every now and then appeared in the records of the Bengal Government, maintaining that character on each successive inroad on our frontier. It is only on the last occasion of our proceedings against them in armed force, that we have seen enough of their organization and habits to judge them more leniently.

The following Extract Report from Brigadier General Brownlow, C.B., commanding Chittagong column of Looshai Expedition, dated 29th January, 1872, is very interesting in this respect. He says:—

"It may not be out of place here to remark that the Looshais or Kookies, for the former term, properly speaking, applies only to the family from which the chiefs of the so-called tribes are descended, appear to me, in spite of their misdeeds, very far removed from the savages they are supposed to be. They live in comfortable houses, in high and healthy ranges. Their mode of cultivation yields the most abundant and certain crops. They are surrounded by pigs and poultry, goats and gyal (a domesticated bison). They fish and shoot, and brew both beer and whiskey. Their domestic and tribal arrangements appear most happy, and altogether their condition contrasts very favourably with that of many of our subject races, so much so, that I am not surprised to hear the majority of the captives, whom they treat as their own people, would look upon a return to civilization as a doubtful boon. The men are of middle height, well limbed and fair, with the Indo-Chinese type of face. Most of those who have hitherto fought against us are armed with flint muskets; but I imagine a spear or javelin, and the universal

dão, are the more common weapons. We have seen no others."

Nor is this Extract Letter from Brigadier-General Bouchier, C.B., commanding Cachar column of Looshai Expedition, dated 20th February, 1872, less so. He writes:—

"On the arrival of the head of the column, a strange scene was enacted, paying a flattering tribute to the reputation of the force, whose character for discipline and good conduct must have preceded it. Men, women and children, old and young, flocked out to meet us. There was little or no fear amongst them; we were surrounded on all sides; watches, telescopes, everything was greedily examined; but what was most strange here and at other places, nothing but turning up our coat and shirt sleeves, and allowing them to feel our arms and faces, could make them believe our white skins were real. The women especially were very clean and good-looking, their hair tastefully arranged in coronets over their heads; they seemed very happy and cheerful. One old man, who said his age was a hundred, knelt at my feet, placed his head on the ground, offered me his blanket, and said all they had was at my service. We afterwards heard that they said we were gods. Mr. Edgar produced a necklace, which I put on his neck. They were evidently delighted with our visit and its happy termination."

Still more pleasant is it to read this extract from "Notes on the Looshais," by Mr. Burland, a tea-planter, who accompanied Mr. Edgar, one of the British political agents with the expedition. He says:—

"With American Indians and many other similar wild races, hunting and war are considered to be the only occupations suitable for men to follow, and consequently they have no instinct for trade, and to them trade is simply degrading. The Looshai, on the contrary, while occasionally indulging in hunting or war, has, for a wild man, a most extraordinary aptitude for trading, and, I am certain, will, with fair opportunities, in a short time be on a level with the Munniporree as a trader, or even with the Bengalee. Taking into consideration the past and present condition of these tribes, having been so long living in a state of perfect isolation, their intelligence is something wonderful; as also their desire to obtain information, most especially in mechanical contrivances. I was of opinion when at Changsil, and am still of the same, that artisans should accompany the officer who visits these people, and that any Looshai who wished to learn any trade should be taught. They are intelligent, industrious, and good-tempered, and from all I saw of them, I believe them to be kind and affectionate in their dispositions when in their own country and pursuing their usual peaceful avocations. When on the war-path, they are neither better nor worse than other

men, civilised or uncivilised. Greater atrocities have been committed by people who are called civilised, when at war, than have ever been recorded against Looshais."

Major Macdonald, who was in charge of the survey party which started from Chittagong with the right column of the Looshai expedition, gives the following graphic account of the Kookes:—

"The Kookas have every reason to be contented with their lot; they raise abundant crops of rice, cotton, melons, gourds, pumpkins, beans, vetches, maize, chillies, and sweet potatoes, with a minimum of labour. 'Joom' cultivation has been so often described that I will not repeat it; apparently all the aboriginals of India joom. The Gond of Central India not only cut down the jungle, but they dig out the roots of the trees. Joom cultivation requires frequent change of place: very steep hill slopes would be denuded of soil if exposed for more than two years. The jungle is then allowed to grow up again, and until the soil is firmly bound by the new roots, it is not prudent to strip the hill-side of shelter, and again prepare it for crops. The complete denudation of hill-tops at the sites of villages shows how little soil there is. Its fertility is something wonderful. I have counted three hundred and sixty-three and three hundred and eighty-seven grains in a single head of rice, and the same soil produced gourds, vetches, and chillies in the same crop. The cotton bolls are immense, bearing very fine thread with short staple. The Kooka cotton fabric is unrivalled for strength and durability; their basket work is as beautiful as it is strong. Mr. Barratt writes regarding the approach of the Kooka system to the European ideal of communism, and remarks very justly on the similarity in their community of land, their obligation to labour, their distribution of proceeds. Such people are not savages, though they may retain some cruel customs. The Kooka shows Chinese descent; his animals, such as pigs and dogs, are unmistakably of Chinese origin; like the Chinese, they eat dog's flesh; nothing comes amiss to a Kooka—he eats everything that flies, runs, crawls, or creeps, as well as the grub in its ante-natal tomb. The Kooka is pious also; before he eats his fowl or pig, he never fails to kill it before his god, which in Kookaland takes the appearance of a stool four inches square, surrounded by a small fence hung with cotton-wool dyed in bright colours. Kookas, male and female, of all ages, smoke perpetually; the women inhale the smoke through water, which retains the essential oil, and is then bottled off for consumption by men, who hand it round much as snuff-takers would offer their boxes; it is presented, too, as a sign of cordiality to strangers. Kooka

houses are built on raised piles ; the family live above, and the pigs below—the latter scavenge. It is an economical system amongst dirty people who wish to be clean without trouble. The people of the hill tribes are very sociable, that is to say, they will eat or drink with us, and have no prejudices. It is to be hoped that contact with us will not degrade the Howlongs into Chukmahs or Tipperahs. The strongest bond of sympathy an Englishman can establish is through sport, for which there is a great field in the upper basin of the Sahjuck, and in the valleys east and south-east of Uiphum.

“Their jungles produce turmeric, yams, ginger, cinnamon, and cardamoms. They are well sheltered, well clothed, sleeping softly on thick cotton counterpanes, and well fed. They have amusements and sports in their forests ; their rivers abound with fish. They are far more civilised than any of the aboriginal races of India, such as the Bheels, Gonds, Kols, and Sonthalees. Their domestic polity is a kind of communism under a species of despotism, the rule of their hereditary chief. I believe no happier people are to be found in the world ; if savage, they are free from the craft of usurers, as well as the persecution of the police and the love of the law’s protection.”

All these accounts of our new allies are very satisfactory, and we may now reasonably hope for far better days in their vicinity. Seeing as they now do the rapid progress of tea planting in Cachar and Chittagong, they may be induced to adopt its cultivation in their own hills, and also to join the industrious coolie bands from other districts, in seeking honest labour, instead of being, as heretofore a source of terror to our border subjects, and of anxiety to our Government.

DISCUSSION.

Sir DUNCAN GIBB said he had been much interested in listening to the author’s clear and graphic account of the Looshais, but he would like to know the descent of those people and whence their origin ; and his reason for asking this was the account given by Dr. Campbell of their voices, which he described as soft and plaintive, and not harsh and guttural like the Tartar tribes further north. Some years ago he (Sir Duncan Gibb) was engaged in some researches upon the voice in the various nations of the world, and as it was wholly new and untrodden ground, he had a great deal of difficulty in obtaining information, for so few travellers speak of the voice as a rule. Yet he succeeded in getting together the materials of a paper, partly through personal investigation himself amongst foreigners, in the Home for Asiatics at Poplar, and in other places, as well as through friends who had been in various parts of the globe, besides a few remarks and hints from the writings of some travellers. The result of it was a

paper on the "Character of the Voice in the various nations of Asia and Africa, contrasted with those of Europe", read before the Anthropological Society, and published in vol. iii of their memoirs. In that memoir the voices of the Indian races were considered, and that described by Dr. Campbell accords in some respects with what he had himself given, but he would like to be sure of their descent. In the same paper he announced many new facts, and showed that the Tartars, for the reasons therein given, had the most powerful voices in the world, and next to them came the Germans, who had the strongest and most powerful amongst European nations. The voice of the Looshais showed them to be a docile and comparatively quiet people, notwithstanding the recent troubles existing among them.

The author exhibited a series of thirty drawings, lent by Mr. Brian Hodgson, in illustration of his paper.

The author then read the following :

STONE IMPLEMENTS *and* FRAGMENTS *of* POTTERY *from* CANADA.
By Sir DUNCAN GIBB, Bart., M.A., M.D., LL.D., F.G.S.

[With two plates].

IN various parts of the Dominion of Canada stone implements of different kinds have been discovered from time to time, which are preserved in many of the local museums, possessing not only considerable variety in their form and supposed uses, but at the same time indicating various degrees of antiquity. With these are not unfrequently found examples of pottery of a very primitive form, marked by patterns described as herring-bone, basket, corn-ear, etc.

The most recent of these stone implements are thick gouges, chisels, hammers, hatchets, and various utensils, for we find them in use among the Indians down almost to the present time. Arrow-heads and spear-heads are unquestionably more ancient, for we do not find them in what are presumed to be recent sepulchres, or in association with the thick stone gouges and chisels already mentioned. They are, moreover, mostly found on the surface of ploughed land or fields composed of gravel or other soils, and marking, in all probability, the site of some engagement or battle-field between different tribes of the aborigines.

The specimens now exhibited are from various parts of Canada, at extreme distances in some instances, and are of different varieties of stone. The collection consists of some sixteen arrow-heads, two flat spears, two hatchets, rather different to what are usually met with, and some portions of pottery, which shall be briefly described in detail.

The spear-heads are respectively $6\frac{1}{2}$ inches long by $2\frac{1}{4}$ inches

wide, and $4\frac{1}{4}$ inches long by 2 inches wide ; the shorter specimen has evidently been broken off at its lower end, and both are without their tangs, that is to say if they ever possessed any ; they are composed of fawn-coloured chert, are thin and irregularly flat throughout, being not more than a quarter of an inch thick at their thickest part ; the larger weighs 3 ozs. less 30 grains, the smaller $1\frac{1}{2}$ oz. and 40 grains. They were found in the Saguenay district, below Quebec, and are of considerable antiquity.

The two hatchets are wedge-shaped, and composed of a dark green micaceous schist, their surfaces being smooth as if polished. The larger implement is $3\frac{7}{8}$ inches long, $1\frac{1}{2}$ inch wide at its narrowest and $2\frac{1}{2}$ inches wide at its broadest part, and $\frac{3}{4}$ of an inch thick. The smaller implement is $3\frac{1}{2}$ inches long, $1\frac{3}{8}$ inches wide at its narrowest and $1\frac{5}{8}$ inches at its broadest part, and $\frac{5}{8}$ of an inch thick ; it is not so well shaped as the other, and has a piece chipped off one of its surfaces. They weigh respectively $7\frac{1}{4}$ and 4 ounces, and the smaller specimen is represented in figs. 1 and 2. They were found at Niagara on the Canada side, close to the Falls, where I procured them on the occasion of my last visit there in 1853.

The stone arrow-heads present some variety in their size, form, and material, as may be observed in the drawings. The smallest is $\frac{7}{8}$ of an inch long, and the largest $3\frac{1}{2}$ inches ; but I possessed a longer and larger than any of these, that measured about $3\frac{3}{4}$ inches, that was stolen from my collection in 1859, when I exhibited it before one of the London Societies. I had never seen a finer arrow in any of the Canadian collections that I examined. Of the arrow-heads, the shape is either long and narrow, tapering to a point, or terminating somewhat in a rounded end, being rather broad than tapering ; indeed one of them resembles a small celt in shape (see fig. 4.) In weight they range from 16, 31 and 44 grains up to 340 grains or close upon $\frac{3}{4}$ of an ounce, which may be considered a good deal for an arrow-head ; but my largest one that was filched from me must have weighed an ounce. Their thickness varies somewhat, one example that is rounded, broad, and flat is $\frac{1}{10}$ ths of an inch, not more indeed than two of the smallest. A small arrow of dark red slate is $\frac{1}{2}$ of an inch thick, whilst the others run from $\frac{1}{4}$ to very nearly $\frac{1}{2}$ an inch ; but of this latter only one approaches it. The tang or stem of the arrow varies in shape and length, as is well shown in the drawings, the longest being $\frac{5}{8}$ of an inch ; the celt or leaf-shaped arrow-head seems to have no tang, as there is no indication of one having existed. Of the sixteen arrows, six were found on the island of Montreal, generally on the surface of ploughed land (figs. 7, 8, 9 and 10) ; two are from the Saguenay

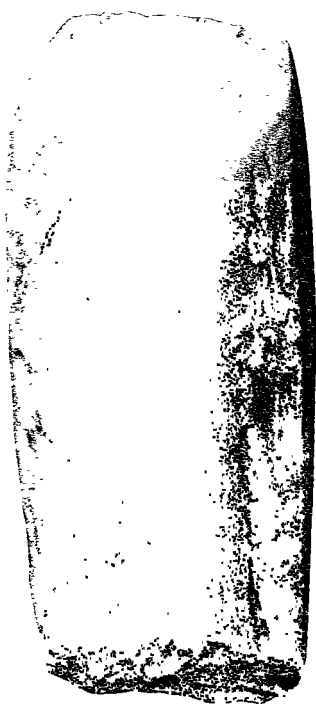


Fig. 1



Fig. 2

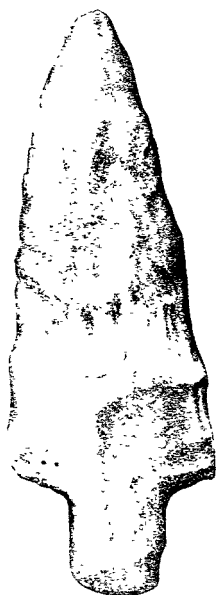
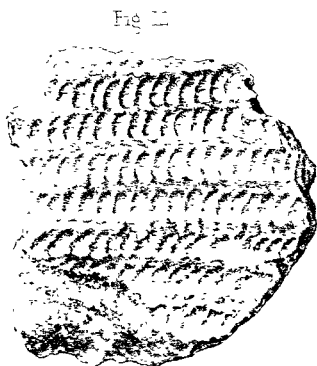
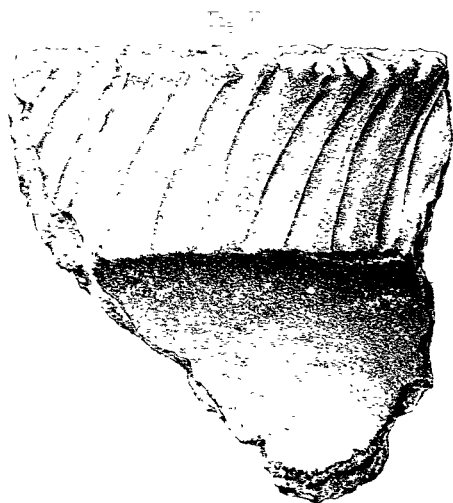
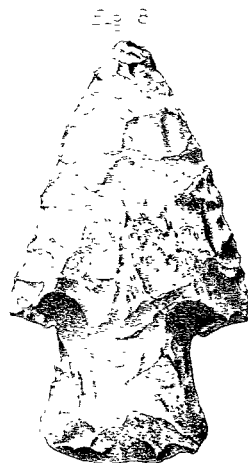
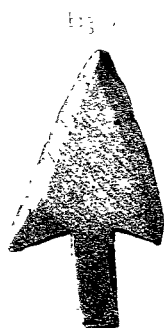


Fig. 3



From the collection of the Canadian Museum of Natural History



(4 and 5); one from Pointe du Chênes, near Grenville, on the Ottawa River (3); one from Chippewa, near Niagara; four from Niagara; one from William Henry; and one from Quebec (6).

The greater number of these arrows are composed of chert, one is of red slate, another of opaque white quartz, and one is much weathered, of a reddish brown colour, probably from the nature of the stone. On the whole they differ in form from the arrows that have been found in the British islands, especially in the shape of the stems, and the general form of the arrow-head itself; but I think they present a fair illustration of ancient Indian arrows that are found over various parts of Canada. No flakes have been discovered in association with them, because they have been picked up as solitary specimens here and there; yet I have no doubt that both chips and flakes may be encountered some day in abundance, when a spot is discovered on which the arrows have been manufactured. A large number of arrow-heads have been found in the vicinity of Chippewa, close to Niagara, and I infer that it marks the site of some ancient Indian battle-field, and no flakes or chips were found associated with them.

The discovery of Canadian pottery is by no means of common occurrence; any fragments, therefore, must be considered of value, and three of these are included in the collection. The smallest is nearly 2 inches square, and is covered on one side with a ribbed pattern formed by a series of notches (fig. 12), the ribs being a quarter of an inch apart; this fragment is imperfectly baked, and was picked up on the northern shores of Lake Erie, and minute particles of mica can be distinguished in it with the naked eye. The largest portion of pottery is a fragment of what evidently must have been a large vessel, and consists of a portion of the upper part with the rim $2\frac{1}{2}$ inches wide, the outer side of which has a well-defined marking, but somewhat irregular and more fanciful; the vessel to which it belonged must not only have been large, but tolerably thick and solid, for the fragment is $\frac{3}{8}$ of an inch thick; it has a preponderance of clay in its composition, and is lightly baked. The third fragment is a portion of a more highly finished and better baked work than the other two, and is triangular in form, the larger end consisting of a part of the rim of the vessel, with well-defined hollow lines an inch long, running vertically from dots or little round holes as shown in the drawing (fig. 11). It is firmer and more solid than the other two examples, and minute specks of quartz and mica can be readily seen in its structure. The patterns vary from what I have seen figured among Canadian specimens, and perhaps for the present are unique, although I learn

there are fragments in the Blackmore collection, Salisbury, found in the County of Brant, Canada, not unlike them. The two last described fragments were found on the Island of Montreal.

Small as the collection is, it took me many years to obtain it, which leads to the inference that such objects are scarce; yet many examples may be in the possession of private individuals living in the localities where they have been found. But in the course of my experience and knowledge of that country, I can state with certainty that nothing has yet been found in the gravels of Canada corresponding to the flint implements from the drift beds of England and France, so that the conclusion is a fair and reasonable one, that however old the arrow-heads and other objects may be which are now exhibited, their manufacturers existed in recent times, as compared with those of the drift period. Nevertheless I considered my specimens of sufficient interest to bring before the Institute, as helping at the same time to draw attention to the subject in the Dominion of Canada.

It would be purely speculative to estimate the age of these arrow and spear-heads; but looking upon them as the most ancient stone implements that are found in Canada, if not in America, I would be disposed to place the period of their use and manufacture at about two hundred years before the Christian era, corresponding indeed to the time when our forefathers in the British Isles may have used such things, either as weapons or as objects of the chase, and I do not think that such an age can be considered in any way remote or extravagant.

DISCUSSION.

Mr. FRANKS said with regard to the fact that stone axes and gouges are not found associated with spear-heads and arrow-heads, it must be remembered that this is not surprising, as the former would be found near the dwellings of the ancient inhabitants, the latter on hunting grounds, forests, or fields of battle. The only spots where we might expect to find them associated, are in ancient graves, or in localities where the manufacture of stone implements had been carried on; but even here the difference in the material of the two classes of implements would render it probable that they would be manufactured at different places. As to any proof of great antiquity for the chipped spear-heads and arrow-heads, it must be remembered that such weapons were in general use in North America until a comparatively late time, and that arrow-heads of stone are still used by the Indians of California, and the Esquimaux. In the mounds of the Ohio, which are generally received as being of great antiquity, arrow-heads are not frequently found, the weapons then in use having apparently been large and broad lance heads. See Squier and Davis' "Ancient Monuments of the Mississippi Valley", p. 212.

Sir DUNCAN GIBB in reply, said the reason of his belief in the antiquity of the arrow and spear-heads, over the well known and more modern stone implements, is that they are never found in Indian graves, whereas the others are commonly so. Then again, they are discovered in districts of country, after the forests have been cut down and cleared away, and this only during the tilling of the soil, rather pointing to the fact that their existence preceded the growth of the forests in some instances at any rate, although he would not deny that the arrows were used for the purpose of killing game. Yet it is the most primitive and certainly the most ancient of the stone weapons in all parts of the world. From the great number of these arrow-heads found from time to time at Chippewa, close to Niagara, in what is clear ground and probably for ages free from forest, it is evident there must have been a severe engagement at one time there between some rival tribes, and as no flakes of any kind have been met with there, it was evidently not a place where arrow-heads were manufactured. Although two thousand years are nothing in point of antiquity, for these arrow and spear heads, he thought we were justified in speaking of their use four thousand years ago, a time when the continent of America was assuredly traversed by aborigines, no matter from what quarter they came. Concerning the pottery, he would remark that as a rule it was scarce and only occasionally found, and generally very primitive in form and ornamentation; the period of its manufacture was probably not very remote. In reply to the question put to him about the existence of animal remains in the caverns of Canada, which he had brought before the scientific world in 1859, at the meeting of the British Association at Aberdeen, he would say that in one only were animal remains found, and that was in Colquhoun's Cavern, in the County of Lanark, Canada. They were the bones of a large deer, and were collected and sent home to Dr. Buckland for examination, and although they reached him safe, his numerous occupations prevented him from doing so, and no account was ever published of them. He (Sir Duncan Gibb) had made efforts to find out these bones at Oxford, but without success, and they were therefore lost to science. He believed that in the Mona and Eramosa caverns, a great series in the Niagara limestones extending from West Flamborough, at the western part of Lake Ontario, northwards to Georgian Bay, when thoroughly investigated, animal remains might be found; and indeed in a cavern on the Island of Montreal called Gibb's cavern after him, a floor of stalagmite was discovered, which had not as yet been properly examined.

The Director read the following paper:

On VENTNOR FLINTS. By H. M. WESTROPP.

At one of the late meetings of the Anthropological Institute, Mr. Avery threw out a challenge to prehistoric archaeologists; he said that flints like those styled flakes and arrow-heads, and

which have been assigned to a prehistoric age, can be found in numberless quantities on the hills behind Ventnor. He expressed doubts whether some of the flints exhibited at the meeting were the work of man, or were not, rather, natural and accidental. On the hill behind Ventnor, he said, a visitor would easily find any number of flints of similar appearance, which were obviously of natural origin.

I have, myself, found several flints on the hill behind Ventnor, bearing a kind of resemblance to flint implements; but I have searched in vain for one with the bulb of percussion, and chipped at the edges, which are the true tests of human workmanship, and of the flint flakes of prehistoric times. All those found on the hill behind Ventnor present a natural fracture, and therefore are totally wanting in the true characteristics of the genuine implement—the bulb of percussion and the chipped edge—and thus can have nothing in common with the genuine flake or arrow-head of human manufacture, and of prehistoric times. Mere likeness does not prove the thing to be what it resembles.

With this note, I send some flints from Ventnor, which exhibit a resemblance to flakes and arrow-heads, but which are totally wanting in the true characteristics of the genuine flint flake.

Mr. Evans, in his admirable work on the “Ancient Flint Implements,” lately published, has noticed some of the distinctive marks by which artificially formed flakes may be distinguished from mere splinters of natural origin. He shows that a flake which exhibits a bulb of percussion and the edges chipped or faulty, presents features which are almost as good a warrant for the human origin of the flake, as would be the maker’s name upon it.

DISCUSSION.

Mr. John Evans said that he had searched for worked flints on the hills behind Ventnor, and found the surface covered with angular flints of natural formation. The only worked flint which he found was a core from which flakes had been detached.

Mr. AVERY and Colonel Fox joined in the discussion.

The President announced that further Committees had been appointed, viz., for Physical Characters of Mankind, for Priscan Archaeology, and for Descriptive Ethnography.

The meeting then separated.

MARCH 18TH, 1873.

Professor BUSK, F.R.S., *President, in the Chair.*

THE Minutes of the last Meeting were read and confirmed.

The Viscount AMBERLEY, 30, Weymouth Street, Ravenscroft, Chepstow; and Lord ARTHUR RUSSELL, M.P., 10, South Audley Street, W., were elected members.

The following presents were announced, and the thanks of the meeting voted to the respective donors:—

FOR THE LIBRARY.

From the EDITOR.—The Food Journal, for March, 1873.

From the ASSOCIATION.—Annual Report of the Geologists' Association for 1872.

From the AUTHOR.—Philosophical Grammar of Arabic; A Lecture on the Races of Turkey; The Theory and Practice of Education in India; A Sketch of the History and Literature of Moham-medanism, part 1; Results of a Tour in Dardistan, Kashmir, Little Tibet, Ladak, Zanskar, etc., vol. i, parts 1, 2, and 3. By Dr. G. W. Leitner.

From the EDITOR.—Cosmos: an Italian Geographical Magazine, No. 1, 1873.

From the EDITOR.—La Revue Scientifique, Nos. 36 and 37, 1873.

From the SOCIETY.—Sitzungsberichte der Physikalisch-medicinischen Societät zu Erlangen, heft 4.

From the SOCIETY.—Proceedings of the Society of Antiquaries of London, vol. 5, No. 5.

From the SOCIETY.—Journal of the Asiatic Society of Bengal, part 1, No. 2; part 2, No. 3.

From the SOCIETY.—Proceedings of the Royal Society, vol. xxi, No. 142.

From the EDITOR.—Zeitschrift für Ethnologie, Viert. Jahr., heft vi, 1872.

From the SOCIETY.—Bulletin de la Société Imperiale des Naturalistes de Moscou, No. 3, 1872.

From the AUTHOR.—Etudes sur la Constitution des Vertèbres caudales chez les primates sans queue; Les Selections (Darwin et Wallace). By Dr. Paul Broca.

From the EDITOR.—The Spiritualist, for March 1st and 15th, 1873.

From the AUTHOR.—Le Nascite per Mesi degli Uomini Illustri Ricerche. By Prof. Paolo Mantegazza.

From the EDITOR.—Nature (to date).

FOR THE MUSEUM.

From Consul T. J. HUTCHINSON.—140 Peruvian Skulls, with Pottery.

From Dr. ROBERT PEEL.—Skeleton of an Australian.

The following paper was read by the Author.

*THE CONCURRENT CONTEMPORANEOUS PROGRESS OF RENOVATION
and WASTE in ANIMATED FRAMES, and the EXTENT to which
SUCH OPERATIONS are CONTROLLABLE by ARTIFICIAL MEANS.*
By GEORGE HARRIS, F.S.A.

[SHORT ABSTRACT].

THE author quoted the opinions of several physiologists on the subject, ancient as well as modern, and referred to the peculiar agencies which, in their opinion, operate to produce both renovation and waste. As these causes are more or less controllable by artificial means, he suggested that a more extended knowledge of the principles of pathology and chemistry would bring them more entirely under our direction. He referred to the peculiar mode in which these powers acted, and recommended experiment in various ways to bring the matter to a successful issue.

DISCUSSION.

MR. CHARLESWORTH made a few observations, after which

THE PRESIDENT remarked that as the point of view from which the author of the paper regarded his subject was entirely different from that in which it would be regarded by any physiologist and pathologist of the present day, he felt it difficult to enter upon any discussion upon its contents. The meaning apparently attached to the terms "waste" and "renovation," as exemplified, for instance, in the case of the rusting of iron, and the so-called "corruption of water"; and in the action of certain poisons, or in fact generally, as applied to living organisms, appeared to him so vague and unusual, that he found it impossible exactly to comprehend the author's real meaning. The author's recommendation of the assiduous study of physiology and chemistry, and his saying that were our knowledge in these two branches of science greater than it is, we should in all probability have more control over the actions of the living organism, are propositions from which no one can dissent; but as regards the recommendation, it seems hardly needed, seeing that no branches of science are at present pursued with more zeal and success than are physiology and chemistry. What the author means by "checking waste," with a view of prolonging life, is not very obvious. As life consists simply in the manifestation of the forces liberated on the passing of matter from a state of unstable to one of stable equilibrium, it would seem that the more rapid the "waste," the greater would be the manifestation of vital activity, so long as new material was simultaneously and continually supplied; and that should we succeed perfectly in "checking waste," our efforts would necessarily be fatal, or stopping short of that, would result in the production of a condition like that of hybernation.

MR. G. HARRIS said, in reply to the remarks that had been made upon his paper, in the first place, the question proposed was not, as

stated by Mr. Charlesworth, "how to prolong life", but "whether there are any artificial means by which it can be prolonged." He (Mr. Harris) had submitted two questions for solution. I. Whether the possibility exists of preventing waste, and so prolonging life by artificial means. II. Whether, although this possibility exists, we are prevented from attaining this end, by the present imperfect state of pathological and chemical science. He had then cited a number of opinions of very eminent authorities on the subject, in order to enable them to arrive at a conclusion. Some misapprehension, nevertheless, appeared to exist as to the mode in which he had treated the subject, and credit seemed to be given to him for advancing views and opinions which were his own, but for each of which he had cited his authority, and referred to it in the margin of his paper; and which, however they might be censured, were those of some of the greatest men who had ever adorned the world of science. All that he (Mr. Harris) had ventured to do, was to make certain suggestions for their consideration. The president said that he (Mr. Harris) had misapprehended the meaning of the term waste, which only amounted to a change in the particles of the particular compound subject, and instanced the case of the consumption of coal by burning. His (Mr. Harris's) meaning appeared however to have been misconceived, as a reference to his paper would prove that he had stated in regard to the vulgar notion respecting the destruction of material objects, that all that occurred was a change in the relation of their particles; and he had even specially instanced the case of consumption by fire. As regards Hunter's imperfect definition of life, to which the chairman alluded, this had been criticised by Coleridge also, who said that Hunter had an accurate conception of it, but that he wanted expressions to convey his meaning. With respect to what he (Mr. Harris) had said about the extraordinary longevity of certain wild animals, this was a notion which had been entertained by many of the old writers on natural history, as also by some modern authorities. The subject of the paper before them was one on which it appeared impossible to arrive at a satisfactory conclusion to which all would agree; but he (Mr. Harris), was gratified that his paper had produced so animated a discussion.

The Author read the following paper :

THEORIES *regarding* INTELLECT and INSTINCT; with an ATTEMPT to DEDUCE a SATISFACTORY CONCLUSION *therefrom*. By GEORGE HARRIS, F.S.A.

I PROPOSE here to investigate together two subjects which, however essentially different one from the other, are closely connected together; and although entirely opposite in their nature, are nevertheless calculated each to throw considerable and important

light on the other. Indeed, this very contrariety between them contributes materially to illustrate their various characters.

The entire subject has commanded the attention of the acutest and of the most comprehensive intellects, and the result of their researches it is my intention here to recount, and then to attempt to effect a fair and reasonable deduction from the theories that have been advanced.

As regards instinct more especially, there is probably no subject whatever of deep scientific interest to which the attention of so many men of extensive capacities and profound acquirements has been called. And yet no one complete positive or definite theory regarding it has been established. As early as Aristotle the enquiry began, and so late an authority as Lord Brougham devoted a volume to this topic. On most matters science has advanced with rapid strides. Here, however, it appears to be completely at a stand-still, though certainly from no neglect of effort to progress. The conquests of science have been well nigh universal. In this one region of enquiry it has been completely baffled. And, indeed (more especially as regards some modern speculations), the more closely and carefully the subject is investigated, the more perplexing does it appear. Fresh discoveries here seem merely to involve us in fresh difficulties; and the only result of any new speculation is to overturn theories hitherto regarded as sound and well grounded. Whenever we attempt to run forward, instead of gaining ground in our march, we find that we have rushed into a quagmire, and there lie struggling with less hope than ever of reaching the end of the journey.

Nevertheless, notwithstanding all this, the very perplexity of the subject gives an interest to its investigation. Its towering acclivities and frightful precipices invite daring spirits to scale its perilous heights, by whom the ordinary level is contemned. Moreover, the consideration of the great minds, the giant intellects, who have devoted their attention to this grand topic, proclaims it to be at any rate worthy of investigation by a scientific association. I am not so presumptuous as to hope to effect any triumph where many others of such superior acquirements have been so signally baffled. But it has occurred to me that a recapitulation of their united efforts may be of important service in the farther prosecution of the enquiry, and that the present occasion affords a favourable opportunity for making such an attempt. I have therefore here given a summary sketch of the opinions of the leading philosophers and writers on the subject:—men whose sentiments on any topic must always command attention, however widely in these opinions they may differ one from another, and we may differ as widely from them.

There is yet, however, one other authority to be appealed to,

which, although greater than any of them, and than all of them together, has not always commanded the respect and attention to which it is entitled. In many cases indeed, it has not been consulted at all; and in some of the few cases where it has (as ordinarily happens where ladies take the advice of gentlemen), a course is followed exactly opposite to that in which we were directed. That high, though despised authority to which I allude, is nature herself, the investigation of whose operations and whose contrivances, alone can lead to a satisfactory conclusion here. The opinions of the learned are nevertheless not to be disregarded, although not in the place of, but only as supplementary to the teaching of nature. Their sentiments may serve us as guide-posts to direct us in studying nature, or they may be rendered more useful still, as beacons to warn us against the errors into which so many, and even themselves, have occasionally fallen.

The greatest of these philosophers, Lord Bacon, in all his researches attentively followed nature, and was the greatest because he did so. In the investigation of the subject before us, nature should be studied, not merely closely and accurately, but comprehensively also. The nature of man and the nature of animals should not only both be studied, but both of them compared one with the other. And not only the constitution of both, alike material and spiritual, but the habits also.

Aristotle's "*History of Animals*"* contains some interesting remarks on the habits of animals. He here treats of all the varieties of animals, and of the structure and parts of each. The knowledge displayed is truly wonderful, and his observation was very extensive.

This philosopher held that perception differs from intellect, the former being common to all animals, the latter to a few. The powers of imagination and memory he considered to originate in the senses, and to be common to many animals as well as man. He, however, supposed that animals have not reminiscence, although they have memory, inasmuch as the exercise of reminiscence requires intellect. Animals, he says, have sensitive phantasy or imagination only; rational creatures alone possess the power of deliberating and comparing ideas.

The opinion that animals possess a spiritual being, which exists after the body has perished, and which may be supposed to confer on them an intelligence nearly akin to, if not identical with that of man, appears to have been entertained by Virgil.† The question as to the future existence of animals is raised by Origen. Also, whether human souls can be transferred into the bodies of animals.‡ St. Augustine is asserted to have believed that animals were endowed with spiritual beings, which would

* B. 9.

† Georg. lib. 4, l. 220.

‡ Vol. 1.

exist in a future state. And that famous father of the Church Lactantius, allowed to animals everything in common with man, even a reasonable soul, except a sense of religion.*

The French writer, De la Chambre, who was counsellor and physician in ordinary to the King of France, in his ingenious "Discourse of the Knowledge of Beasts", written in 1657, expresses it as his opinion, that "beasts reason, but that their reasoning is formed only of particular notions and propositions, wherein it is different from that of men, who have the faculty of reasoning universally; and that this faculty is the true difference of man, which marks the spirituality and immortality of his soul."† He remarks on the evident calculation and contrivance and apparent reasoning evinced by dogs, and also by wild animals in hunting.‡ He refers, also, to the dreaming of animals, as evidence of their possessing both memory and imagination.* As regards the language of animals, he contends that their cries and accents are by the institution of nature, as well as the speech of men.§

Des Cartes, however, held animals to be not only destitute of reason, but probably of all thought; and he considered that they performed their various functions as mere automata, excited to motion only by means of animal spirits, which act upon the nerves and muscles. But when he alludes to the sensations of pain, hunger, and thirst, in the case of man, proving the intimate union between the soul and the body;¶ it appears difficult, consistently with his theory, to dispense with the existence of some immortal spiritual being in the case of animals also.

Hobbes remarks, that animals demur in their proceedings, in the same way that man does, who deliberates according as he is influenced by the hope of good or evil.**

The famous Dr. Willis, in his very celebrated work, "De Animâ Brutorum" (on the souls of animals), observes that the Platonists and Pythagoreans believed the souls of animals to be an incorporeal substance, part of the universal world, and that they were imprisoned in bodies as in sepulchres, and that the souls wandered from one body to another.†† He also asserts that the soul of the animal, as the inferior soul of man, is material and divisible, and coextended with the whole body.‡‡ He, however, infers that the souls of animals consist of particles of the same matter out of which the body is formed, but that they are choice, most subtle, and highly active.§§ In another part of the same

* "Pensilwood Papers," vol. 1.

† P. 7.

‡ Pp. 84, 85.

¶ P. 150.

§ P. 279.

¶ Part 6.

** "Of Liberty and Necessity."

†† Pordage's translation, p. 2.

‡‡ *Ibid.*, c. 2, p. 4.

§§ "De Anima Brutorum" (Pordage's translation), c. 2, p. 6.

great work, he contends, that if the souls of animals are immaterial, they are also rational; and he goes on to remark—"After what manner in brutes, perception, or discerning, or discrimination of objects, appetite, memory, and other species or kinds of inferior reasons, as one may say, are performed, seems very hard to be unfolded." Therefore, he says, some have attributed to animals immaterial souls existing after their bodies.*

It may here be observed that the opinion entertained by some, of there being two distinct souls in man, the rational and the corporeal, appears nearly to correspond with the opinion which Willis expressed of man being endowed with both reason and instinct.† This writer, however, expresses a doubt whether we ought to assign souls of the nature of fire to bloodless animals inhabiting the waters.‡ Indeed, as animals differ greatly one from the other, as regards their manifestation of instinct, so it may be concluded that they differ correspondingly as regards their manifestation of it, and consequently as regards the vehicle or principle possessed by them in which it essentially resides.

Sir Matthew Hale remarks, in his famous work "On the Primitive Origination of Mankind", that it is impossible to resolve perception, phantasy, memory, the sagacities and instincts of brutes, the spontaneousness of many of their motions, into a principle that this proceeds from the modification of matter; and that they are not explicable without supplying some active determinate power of a higher extraction than the bare modification of matter, or disposition of organs.§

Dr. Henry More and Dr. Cudworth both held the opinion that animals are animated and directed by an incorporeal soul, not differing in kind from that of man, but only in degree.

Locke, in his renowned "Essay on the Understanding", holds, that animals to some extent compare ideas, that is, are able to reason as man does, although but very imperfectly.||

Sir Isaac Newton, in his "Principia", lays it down that "all sensation is performed, and also the limbs of animals moved in a voluntary manner, by the laws and actions of a certain subtile spirit, that is, by the vibrations of this spirit, propagated through the solid capillaments of the nerves, from the external organs of the senses to the brain, and from the brain into the muscles."

Dr. Priestley, in his "Disquisitions on Matter and Spirit", contends that if man be actuated by a principle distinct from his body, every brute animal must have an immaterial soul also.¶

The great naturalist, Buffon, in his renowned "Histoire Naturelle", considered that animals have in common with man an

* *Ibid.*, "De Scient. Brut." c. 6, p. 32.

† *Ibid.*, c. 6, p. 40.

‡ "De Animâ Brutorum" (Porl. trans.), c. 3, p. 13.

§ S. S., c. 2, p. 49.

| B. 2, c. 11, s. 5.

¶ P. 62.

interior as well as an exterior sense, but that in animals the interior sense is entirely material. Man has also this material sense, but he possesses besides one of a nature highly superior, which resides in the spiritual substance, and which animates and guides him. He deemed that animals have neither ingenuity, understanding, nor memory, because they are denied the power of comparing their sensations. Animals and idiots, he concluded, possess memory only so far as it consists in the renovation of our sensations, and not of the ideas. In particular animals, he considered that particular senses predominate, and that animals in general enjoy that of taste in a more exquisite degree than man does. In animals, whatever relates to their appetites strongly agitates their interior sense. He considered that all the actions of animals may be explained without allowing them either thought or reflection, the internal sense being sufficient to produce all their movements. Satisfying the appetite he asserts to be the principal pleasure of animals.*

Mr. Dean in his "Essay on the Future Life of Brutes", observes that the word soul, according to the doctrines of the ancients, has a three-fold meaning or distinction; and that it is considered alike as a spiritual, a sensitive, and a vegetable principle. That man is possessed of it in all three senses, animals in the two last, and trees, herbs, and plants have the vegetative soul only.† He contends, that if animals have souls, and in consequence may exist hereafter, we may superadd that they have ideas and a power of communicating them. Every species, says he, has a language peculiar to itself, by means of which all the individuals that compose it are able to converse with each other, to impart their pains and pleasures, their fears and dangers, their desires and intentions. And he asks, what can all this arise from, but an intelligent principle residing within them?‡

The celebrated navigator, Captain Cook, who had peculiar opportunities for making observations of this kind, remarks on the instinctive sagacity displayed by many wild animals, and particularly on the extraordinary capacity in this respect of the bears of Terra del Fuego, as observed by the natives, in discovering the properties of certain medicinal herbs, and both applying them to their wounds, and for the cure of internal disorders. ||

The great mental philosopher, Dugald Stewart, in his "Philosophy of the Human Mind", lays it down that brutes are under the more immediate guidance of nature, while man is left to regulate to a great degree his own destiny, by the exercise of his reason. Instinct, he says, is distinguished from reason by two circumstances. 1. By the uniformity with which it proceeds in

* Barr's "Buffon," vol. v, pp. 17, 18, 23, 24, 28, 30, 33, 47. † P. 62.

‡ Pp. 111, 112.

|| "Voyages Round the World," vol. 6, p. 2170.

all individuals of the same species. 2. By the unerring certainty with which it performs its office, prior to all experience. Animals, however, he observes, make some small acquisitions by experience, as appears from the sagacity of the old, when contrasted with the ignorance of the young; and from the effect which may be produced on many of them by discipline and education.

Mr. Smellie, in his "Philosophy of Natural History", asserts, that "the natural superiority of man over the other animals is a necessary result of the great number of instincts with which his mind is endowed."*

In that remarkable work, "Vestiges of the Natural History of Creation", it is laid down that, "the difference between mind in the lower animals and in man, is a difference in degree only; it is not a specific difference."†

And, Sir William Lawrence, in one of his "Lectures on Comparative Anatomy", asserts, that "we cannot deny to animals all participation in rational endowments, without shutting our eyes to the most obvious facts."‡

According to Mr. Smee, in his work "On Instinct and Reason", "man only differs from the dog inasmuch as he has a higher organization."||

And as regards the future being of animals, alluded to, Mr. Isaac Taylor, in his "Physical Theory of Another Life", observes: "It must indeed be confessed that the argument of the immaterialist, as sometimes conducted, if pushed to its consequences, would go near to imply the immortality of birds, beasts, and fishes, of insects, and of zoophytes!"§

Mr. Herbert Spencer, in his "Principles of Psychology", says, that "instinct may be described as compound reflex action."¶ And he concludes, that "the commonly assumed *hiatus* between reason and instinct has no existence;"** asserting, "the impossibility of establishing any line of demarcation between reason and instinct."††

Mr. Darwin, in his "Descent of Man" says, that "few persons any longer dispute that animals possess some power of reasoning."‡‡

Professor de Quatrefages, in his "Rapport sur les Progrès de l'Anthropologie" (Report on the Progress of Anthropology), goes still further, in remarking that to this extent domestic animals may even be regarded as religious beings, in that they readily obey those who correct or indulge them. And that animals fly to man for protection, as a believing being does to his God.||||

* C. 17, p. 435.

† Smith's edit., p. 253.

‡ Sect. 4.

|| P. 220.

§ C. 20.

¶ Vol. i, p. 432.

** *Ibid.*, p. 453.

†† *Ibid.*

‡‡ Vol. i, p. 46.

|||| *Ibid.*, pp. 85, 87.

The late Dr. Darwin, in his "*Zoonomia*", and Tupper, in his "*Sensation in Vegetables*", attribute irritability to plants. And the late Professor Sir J. E. Smith, in his "*Introduction to Botany*", suggests, that as vegetables possess life, irritability, and motion, the exercise of the vital functions may be attended with some degree of sensation, however low.* He also suggests that, as a consequence of this, vegetables may experience "some share of happiness."

Such is, I believe, a fair summary of the leading axioms enunciated by the leading minds who have devoted their great powers to the investigation of the subject before us. Other authorities might be cited, but I believe that all that is important in them is comprehended in the opinions which I have adduced. On a cursory view they may rather appear to throw sudden corruscations or flashes of light, than to afford any steady illumination to guide us in our career. Be this as it may, the irregular glare which they cast is so far valuable, however inferior it may be to a clear and steady light. It is folly to refuse availing ourselves of the lamp at night, because we cannot then have the light of the sun. The differences and even apparent contradictions as regards their conclusions, will also, in many cases, be found more apparent than real; more extensively varied than actually irreconcilable. But they may all alike, if comprehensively considered and liberally viewed, aid us in arriving at a correct conclusion. We may not agree entirely with any of them. But still less shall we entirely disagree. So also with regard to each other, they do not absolutely contradict, however they may qualify each other's conclusions. If none of them are entirely right, none of them are entirely wrong. The principles enunciated by each may suggest something that is valuable for our guidance. And as is the case with regard to certain substances in nature, although very opposite in their respective qualities, they may together amalgamate into, and each contribute to form a valuable and indeed essential ingredient in the same compound.

The two provinces of intellect and instinct appear to me to resemble two different countries, which in many of their main features and productions bear a close similarity and affinity one to the other, while in certain other respects they are strikingly and totally dissimilar. Instinct boasts of some productions, and bears some precious fruits which intellect or reason is totally unable to bring forth; while, on the other hand, the nobler products of intellect are incomparably richer and more luxuriant than anything which instinct can rear, and whose lofty heads tower into the regions of celestuality, while the ramifications of instinct only run upon the ground.

* Page 3.

Intellect and instinct differ moreover in two essential respects—as regards the topics which they embrace, and as regards their mode of dealing with those topics. With respect to the first of these points, intellect embraces the consideration of abstract as well as substantial or material topics; those which are moral and intellectual as well as those which are material, but which latter only are within the scope of instinct. As regards the essential difference between intellect and instinct, with respect to the mode of dealing with various topics; while instinct merely takes cognizance of them so far as sensation proceeding from them conduces to accomplish this end, intellect not only takes cognizance of them in this manner, but proceeds to certain other operations of various kinds, founded indeed upon this cognizance, but carrying on those operations much further, and which are effected by the action of those various intellectual faculties and capacities with which man only is endowed.

That animals possess a certain amount of intellect or intelligence, resembling and in several respects approaching to that of man, it appears on many accounts reasonable to infer. In this respect, as we have seen, Locke, Hobbes, Willis, De la Chambre, and the more modern authorities, Sir W. Lawrence, the author of “*Vestiges of Creation*,” and Mr. Herbert Spencer, substantially agree. They differ mainly, but perhaps not very essentially, as to the extent to which animal intelligence may be carried or applied. That the limit of their capacity is very inferior to that of man, none of them would I believe deny; while, on the other hand, the authorities cited would agree with Sir Matthew Hale and Captain Cook, as to the wonderful sagacity sometimes displayed by animals, in certain respects far exceeding that of man.

An interesting question might here be raised, whether intelligence to any extent is essential to instinct, and whether all the various operations effected by instinct might not be accomplished through the aid of sensation alone, independent of any intelligent direction. That the sensation of animals, especially those in a wild state, whose senses become considerably blunted by domestication, is vastly superior to that of man, few observers of animal nature, from Aristotle to Captain Cook, will entertain a doubt. It appears also obvious that they are to a large extent here impelled by the acuteness and power of their senses. This is probably what Des Cartes meant when he speaks of them as mere automata, though, as we have seen, he qualified his meaning in another passage. Nevertheless, the extraordinary uniformity with which animals act, resembling the uniformity of a machine or of an automaton, justifies Des Cartes in the comparison which he made of them. Thus, all birds of the same species build their nests exactly alike, provided of course that they have all access alike to

the same materials; nor do they improve by practice, as in the case of reasoning beings who act irregularly and uncertainly.*

In certain cases, nevertheless, as remarked by Locke and Hobbes, animals doubtless exercise deliberation with regard to their actions. In addition to this, certain old animals, more especially horses, and dogs, and hares, and probably others also, although we have not so attentively observed them, display a great deal of cunning, and that in various ways.† Now cunning implies calculation to a certain extent, and calculation to a certain extent intellect, or reasoning power. Hence, although animals in many of their instinctive operations, particularly in the choice of food and the provision for their young, and more especially as regards their migration, appear to be actuated by a sort of blind irresistible instinctive impulse, which has caused them to be considered as mere machines, as is done by Des Cartes, and their unerring precision in which they owe I believe mainly to their very perfect sensitive organs, far superior to those of man; yet in certain of their actions, such as those which imply calculation and also memory,‡ it would seem that they must necessarily be directed by some principle or endowment independent of, and quite beyond this, and which would lead to the conclusion, by no means inconsistent with the foregoing theory, that there exists in animals some being which, though very limited in its capacities, is of a spiritual intelligent nature, analogous to the soul in man, as held by Virgil and Willis, and certain other philosophers to whom I have referred.

I may here passingly remark, that we have no right to object to animals being endowed with an immaterial principle, merely because such an argument may be supposed to weaken, though I believe it contributes to strengthen, the proof of man possessing a soul. Half the errors, both in philosophy and theology, have arisen from the attempt to distort facts, so as to prevent them from squaring with the obvious consequences to which they lead.

Not only, however, several distinguished philosophers, but some eminent divines have attributed to animals not merely souls, but a future state of being. In addition to the ancient fathers of the Church, whose opinions on this subject I have already cited, the famous Archbishop Tillotson remarked that "the most common and general philosophy of the world hath

* "A man has to learn his work by practice; a beaver, on the other hand, can make its own dam or canal, and a bird its nest as well, or nearly as well, the first time it tries, as when old and experienced."—Darwin's "Descent of Man," vol. i, p. 39.

† See Leroy, "On the Intelligence and Perfectibility of Animals," pp. 105, 122, 123.

‡ *Ibid.*, p. 115.

always acknowledged something in beasts besides their bodies, and that the faculty of sense and perception which is in them, is founded in a principle of a higher nature than matter. And as this was always the common philosophy of the world, so we find it to be a supposition of Scripture, which frequently attributes souls to beasts as well as to men, though of a much inferior nature." The Archbishop further remarks, that "immortality imports that the soul remains after the body, and is not corrupted or dissolved together with it. And there is no inconvenience in attributing this sort of immortality to the brute creatures."*

That language to a certain extent, and of a certain kind, is possessed by animals, we all know, and that language appears to me to be exactly correspondent with, and is precisely reflective of the extent of their intelligence. They can communicate to each other their physical wants and emotions by this means, but are unable to carry on any conversation relating to abstract topics, such as man can effect. Their language is all sufficient for their wants, and for the notions that they are capable of receiving, but does not extend beyond this. It is in fact language simply, but does not amount to articulation, or as Professor De Quatrefages well expresses it—"Animals have voice, man only speech."† Here Locke, and Hobbes, and Willis, and De la Chambre, and modern writers, appear to coincide. The only language of animals is, moreover, oral. But, although they have no artificial written language, in the place of this, outward visible objects may to some extent serve as a natural symbolical language.

I would suggest therefore, as a deduction from what I have advanced, that instinct may be correctly defined to be an impulse implanted in each animal, and to a limited extent, and in a certain mode, in many if not in all vegetables also, which is in some cases originated, and in all cases is directed by sensation, or, a certain sensitive impulse or irritation. The exquisite nature, peculiar character and relative extent of the sensitive organs and endowments in the beings so excited, are what mainly determine the quality and amount of their instinctive powers, although these powers may be exercised through the aid of some immaterial, and to a limited extent, intelligent being, or principle implanted in or annexed to the animal. Instinct, however, not only varies in each creature according to its nature and organization, form, and condition; but in each creature it varies so as to adapt itself to the particular exigencies in which it is placed. These instinctive powers moreover stimulate, and also regulate the propensities and habits and actions of each particular animal. But inasmuch as not only

* Sermon 122.

† "Rapport sur le Progrès de l'Anthropologie." See also Leroy "On the Intelligence and Perfectibility of Animals," pp. 72, 73.

animals of every variety, the lowest as well as the highest, are endowed with and guided by instinct, but vegetables also evince proof of being to a certain extent thus gifted and thus directed: an evidence is thus afforded, that there is no necessary connection between intelligence and instinct.

Instinct, indeed, never arrives at, although it may appear sometimes nearly to approach intellect, as in the case of animals exercising memory, hesitation, and calculation, already referred to; inasmuch as instinct does not at all or in any respect qualify the beings endowed with it to deal with any of those high abstract and moral topics in which intellect alone is capacitated to engage. Intellect is, in fact, to instinct, what flying is to walking. Animals without wings can no more hope to soar in the air, than animals without intellect or reason can be expected to attain any one of the sciences, to read, to write, or even to talk. But as animals without wings are much better fitted to traverse the earth than those who can fly; so the instinctive power of animals enables them to perform many of their functions far more perfectly than reason directs man in the same operations. Instinct appears to be perfect as regards the ends for which it is adapted, but it is limited to those ends. Intellect has a far greater sphere extended to its range, but it is far less perfect and unerring as regards the operations which it effects. Intelligence and instinct, like two parallel lines, run very near together, but they can never by any possibility meet. Although they greatly resemble one another, they are totally and essentially different. Instinct is the highest development of animal being. Intellect is the lowest manifestation of a wisdom which is divine.

DISCUSSION.

Mr. SERGEANT COX.—Instinct is one of the many words which we are said to use to conceal our ignorance. Nevertheless, it imports something whose existence we recognize, and of which he had hoped to hear a definition. The only approach to it was that it was an unreasonable impulse. But animals are not mere machines. They exercise an intelligent choice, as we do. It is not true, as usually asserted, that animals are led by instinct, man by reason. Animals have reason as well as instinct, as all who observe them will admit. Man has instinct as well as reason. The difference between them is not in kind, but only in degree. His contention would be that instinct was the result of brain structure, adopting the Darwinian theory of evolution and progression. The newly-hatched chick pecked its food and knew its mother; why? because its brain by a long succession of breeding was constructed in the same manner as our brains become shaped by education, and thus without education the brain receives impressions and performs consequent actions which otherwise could be attained only by experience. There are three mental conditions, instinct, experience, and

reason. When the brain thus acts by force of its own structure, anterior to experience, it is what we call instinct, and we do this or that, we know not why, only that we are prompted to do it. Then comes experience, and we make a choice between actions, because we have learned by trial that one is preferable to the other. Lastly, we have the aid of reason, which is nothing more than putting two experiences together and deducing from them a probability. For instance, we have learned that a certain thing has certain qualities, and that those qualities have done certain services. We find another thing having the like qualities. Then reason concludes that, having the like qualities, it would probably produce the same effects. However long the chain of reasoning, it is nothing more than a repetition of the same simple process. He then related instances of reason shewn by animals, as also of their instinctive acts. He attributed the similarity of their nests in birds, not to the presence of instinct, which would make them exactly alike, nor to the absence of reason, for they certainly adapted them to surrounding circumstances, but to a deficiency in the faculty of imagination. Man varies his dwellings because by his imagination he is enabled to construct in his mind habitations of various forms. Wanting this, birds can build only according to experience, modified by surrounding circumstances. The general structure of their nests is the result of instinct and of inherited brain structure, but reason enables them to adapt the external form to the locality; while they have not imagination to picture in their own minds, and consequently to construct, an entirely different structure.

Dr. RICHARD KING, Mr. EDWARD CHARLESWORTH, and Mr. PARK HARRISON also joined in the discussion.

Mr. G. HARRIS said that he was gratified to see Mr. Sergeant Cox, who had only lately joined the Anthropological Institute, taking so active a part in the discussion, and felt sure that he would prove a great acquisition to the Society. Mr. Cox, however, complained that he (Mr. Harris) had given no definition of instinct. He had, nevertheless, given definitions in abundance from all the first authorities on the subject, although the conclusions at which he endeavoured to arrive might not be satisfactory. And indeed, as the president had remarked, the matter was almost insoluble. Mr. Cox thought that the nearest approach to a correct account of instinct was given by Mr. Darwin, for whom he (Mr. Harris) had the highest admiration as a naturalist, without venturing to subscribe to all his particular theories. The president had stated that the most satisfactory definition of instinct is that afforded by Mr. Herbert Spencer, and which was one of those quoted in the present paper. The subject before them was one peculiarly suited for discussion, and he (Mr. Harris) was gratified that his paper had been the means of calling forth the expression of so many various sentiments as it had done. Agreement with him was not to be expected, and he was not so unreasonable as to desire it. Debates of this character, when fairly conducted, cannot but conduce to the attainment of truth; and to promote this end was perhaps the most successful result which any paper, on so uncertain and speculative a subject, could be expected to attain.

The meeting then separated.

APRIL 1ST, 1873.

Professor BUSK, F.R.S., *President in the Chair.*

THE minutes of the previous meeting were read and confirmed.

The following new members were announced: Sir THOMAS GORE BROWNE, K.C.M., Athenæum Club; RICHARD WORSLEY, Esq., Reform Club; THOMAS H. GAY, Esq., 103, Victoria Street.

The following presents were announced, and the thanks of the meeting voted to the respective donors.

FOR THE LIBRARY.

From the ACADEMY.—Bulletins de l'Académie Royale des Sciences de Belgique, 2me serie, tomes 31-34; Mémoires des Membres, do., tome 39; Mémoires, couronnés et autres, do., tome 22; Centième anniversaire de fondation, 2 vols.; Annuaire de, do., 1872-3.

From the AUTHOR.—Tables de Mortalité et leur Developpement; Unité de l'Espèce Humaine; Notices extraites de l'Annuaire de l'Observatoire de Bruxelles, pour 1873. By Ad. Quetelet.

From the AUTHOR.—Etudes sur les facultés Mentales des Animaux, comparées à celles de l'homme, 2 vols. 1872. By J. C. Houzeau.

From the EDITOR.—La Revue Scientifique, Nos. 38 and 39. 1873.

From the SOCIETY.—Jahrbuch der K. K. Geologischen Reichsanstalt, Band xxii; Verhandlungen, ditto, Nos. 14, 18; General Register, ditto, Bande, xi-xx, Wien.

From the SOCIETY.—Mittheilungen der Anthropologischen Gesellschaft in Wien, Nos. 9 and 10.

From the INSTITUTION.—Journal of the Royal United Service Institution, vol. xvii, No. 70.

From the EDITOR.—Matériaux pour l'Histoire Primitive et Naturelle de l'Homme, Dec. 1872.

From the SOCIETY.—Proceedings of the Royal Geographical Society, vol. xvi, No. 5, vol. xvii, No. 1.

From the EDITOR.—Nature (to date).

The President having vacated the chair in favour of Sir John Lubbock, Bart., read a paper as follows:

REMARKS on a COLLECTION of 150 ANCIENT PERUVIAN SKULLS, presented to the ANTHROPOLOGICAL INSTITUTE, by T. J. HUTCHINSON, H.M. Consul at Callao [with Plates VII and VIII]. By Professor BUSK, F.R.S.

THIS important and interesting collection of ancient Peruvian crania was forwarded during the year 1872, by Consul Hutchin-

son, who has devoted much time and labour in the exploration of the ancient burial places in the country around Callao.

The first instalment consisted of eight skulls from a "*huaca*", or ancient burying ground near Santos, to the north of Callao. They are considered by Mr. Hutchinson to be those most likely of the tribe of Chinchas, or Huancas, or perhaps, as he surmises, of Quichuas, or Aymaras; all of which tribes he states are now probably absorbed into the Cholos, a *mestizo* or mixed race. In the neighbourhood of this locality, at a place called Ica, Mr. Hutchinson had exhumed an earthenware round jar, or jug, containing all the bones of a full-grown man, and side by side with it were several smaller urns, containing the bones of children. On exposure to the air, these bones fell to powder, but the urn has been sent. Besides the eight skulls from the locality above referred to, Mr. Hutchinson sent twelve more to Dr. B. Davis, who has forwarded them for exhibition on the present occasion, and it is much to be regretted that he has not himself been able to attend, to give us his views concerning them.

The next despatch from Mr. Hutchinson, accompanied with a letter, dated 26th April, 1872, comprised twelve skulls, with the lower jaws, which he says were picked up in the same place of interment, near Ancon, from which the mummified bodies had been turned up by the Spaniards at the time of the conquest, when searching for treasure. However this may be, it is curious to find that among these bones, and other relics from the same place, is the entire hoof of a mule, which could only have been introduced by the Spaniards at or since the invasion of Peru by Pizarro and his followers. These crania were accompanied by some leg and thigh bones with the dried flesh still upon them, showing that the bodies had been buried in the usual sitting posture. Together with them, also, were some fragments of fishing nets, and a wooden club and sword. The site is about twenty miles north of Callao, and about a mile only from the sea-shore.

In another communication, dated August 20th, Mr. Hutchinson announced, that he had sent off another collection of from thirty-six to forty skulls, with the lower jaws, and states that he had collected the great number of three hundred and sixty-eight skulls for Professor Agassiz; and noticing that amongst those here collected, was one with the frontal suture open.

Another letter of September 12th, 1872, announced the sending of five cases of Indo-Peruvian skulls. Of these (cases 1, 2), fifty-eight were procured from Pasamayo, five miles south of Chançay, and thirty miles north of Callao. At this place it is stated that there are two burial-grounds close to the sea-shore, and that the surface of the ground for nearly a mile square from the beach up a sand hill, is white with skulls and bones derived

from bodies which were dug up, no doubt, by the early Spaniards. He remarks also, that some of the lower jaws from this place are stained with copper on the inside, from a coin which had been placed in the mouth, and one of them, he states, has had a copper plate or skull-cap on the head. A very curious circumstance, when taken in connexion with what we know, was the practice among some Asiatic, and in remote times, even among some Western European peoples, of encasing the skulls of friends or enemies in metal; a subject upon which I offered some remarks on a former occasion, when describing an engraved calvaria from China.*

Mr. Hutchinson remarks that among this collection there were also two in which the frontal suture was not closed.

Another case contained twenty-three skulls from Ancon, and Mr. Hutchinson remarks that in that neighbourhood there are three different styles of graves at places situated some distance apart; but strange to say, here, as at Pasamayo, there are vestiges of houses.

The burial places are:—

1. Cylindrical or funnel-shaped graves, lined on the inside with stones, in some of which the bodies appear to have been placed upright.

2. An ordinary longitudinal grave, of the same style as those in our churchyards.

3. A large square excavation which is roofed with rafters covered over with bamboo matting. In some of these latter Mr. Hutchinson found five or six bodies, including men, women, and children, swathed in clothes, and with the faces covered, some with cotton, others with llama wool.

At Ancon all the graves contain either pottery, or cloth, or pieces of fish nets, or needles for manufacturing nets, or lace work, or bags that resemble reticules for ladies.

Another case contained thirty-three skulls, from the Cerro del Oro, in the Canéte valley, interior to Cerro Azul, about a hundred miles south of Callao; and in another were thirteen skulls from the same place, together with two from Pasamayo, and a few ordinary specimens of prehistoric Peruvian crockery ware.

Those from Cerro del Oro are from the brow of a hill, which shows evidence of having been densely populated in former times, from the quantity of *adobe* ruins in the neighbourhood. "To the best of my recollection", he says, "it was here that Pizarro and Almagro had their first meeting. And the old road from the Canéte Valley to Lima passes by the ruins of the celebrated temple of *Pachacamac*.

"The whole of the Canéte Valley, now covered with sugar

* "Ethnological Journal," vol. ii, p. 73, 1869.



Fig. 1.

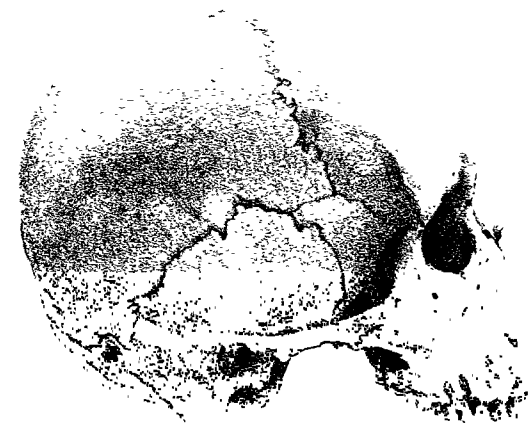


Fig. 2.

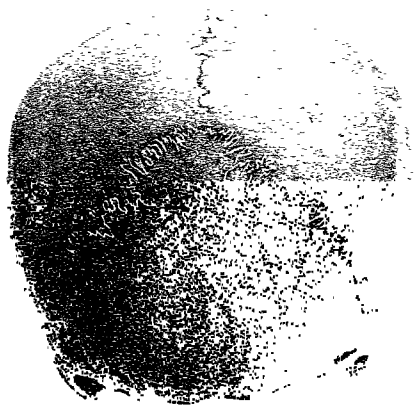


Fig. 3.



Fig. 4.

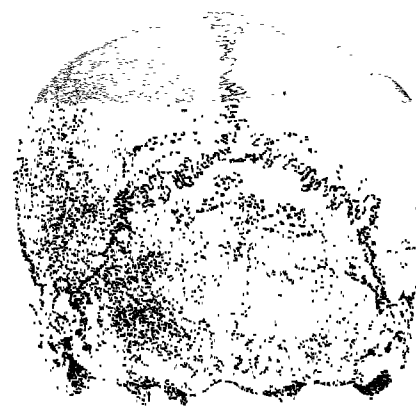


Fig. 5.



Fig. 6.



Fig. 7.



Fig. 8.

SCALE

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

SCALE
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100



plantations, is full of Huacas, or Mounds of interment described by Prescott. So also in the Valley of the Runiac, as well as that of Huatica, in the districts between Chorillos and Lima converging seaward to Callao and Ancon. These mounds are for the most part still unexplored. Of some such Prescott writes: "vast mounds of an irregular or more frequently oblong shape, penetrated by galleries running at right angles to each other, were raised over the dead, whose dried bodies or mummies have been found in considerable numbers, sometimes erect, but more often in the sitting posture common to the Indian tribes of both Continents. Treasures of great value have also been occasionally drawn from these monumental deposits, and have also stimulated speculators to repeated excavations, with the hopes of similar good fortune."

"But the skulls which I send", Mr. Hutchinson goes on to say, "are not from '*huacas*', but from places of interment such as are described in '*Peruvian Antiquities*', by Don Mariano Eduardo Rivero."*

Having thus, for the most part in Mr. Hutchinson's words, described the localities from which the present collection of crania was procured, I will proceed to offer a few remarks upon them regarded craniologically. But since the matter has come more particularly under my attention, I have found that so much has been already written on the subject by others, that very little remains for me to remark without repeating what has been already published, a general *resumé* of which will be found in Professor Daniel Wilson's "*Prehistoric Man*", and "*On the Cranial Characters of the Peruvian Races of Men*", a paper by Mr. C. C. Blake in the second volume of the *Transactions of the Ethnological Society* for the year 1861-2; a paper which is especially valuable for the copious references to the previous literature on the subject.

Perhaps, however, the most complete view within a small compass of the subject as regards these ancient Peruvian races, will be found in Professor D. Wilson's work above cited (p. 225), where he gives an account of his observations, made upon the collection of mummied bodies and crania in the possession of J. H. Blake, Esq., of Boston, and which was brought by him from ancient Peruvian cemeteries on the shore of the Bay of Chacota, near Arica, in latitude 18° 30' S., which burial places appear to be of exactly the same kind as those from which Mr. Hutchinson's collections were procured. As Dr. Wilson's work is in our library and readily accessible, there is no occasion for my making any lengthy extracts from it on the present occasion. It may be mentioned, however, that Mr. Blake remarks that

* Chap. viii, p. 200 et seq G. Putnam and Co., New York, 1858.

“there is no record or tradition, concerning this and similar cemeteries, of the period when they were made use of; and it is by no means certain that they contain the remains of the ancestry of the Indians who now occupy the country.”

He remarks also that the colour and texture of the hair are facts of great importance to the Ethnologist, as indicating essential differences from the modern Indians in one important respect; and therefore confirming the probability of equally important ethnic differences suggested by other evidence.

With respect to this point, Professor Wilson (p. 235) states that he has repeatedly obtained specimens of hair from Huron graves near Lake Simcoe, the most modern of which cannot be later than the middle of the seventeenth century, yet in all of which the hair retains its black colour and coarse texture, unchanged alike by time and inhumation; and in this respect corresponding with that of the modern Indians of South America and also of the Chinese and other true Mongols of Asia.

The hair, which is so abundant upon many of the crania on the table, is, as will be observed, by no means coarse, but rather fine and silky,—nor is it truly black, but rather of an auburn tint, whilst on one the hue is reduced to a dirty stone colour. But there is no reason, perhaps, on this account to assume that the hair in both cases was not originally black, exposure in a hot, arid, sandy soil, and in the latter case probably to the weather, being sufficient to account for the change of colour from black to the present tint. But the comparative fineness and coarseness are another and more important matter, and if, upon proper microscopic examination and comparison, the differences stated to exist between the ancient and modern Indian hair should be found really to exist, a strong argument would arise in favour of those who suppose that the ancient cemeteries may not really contain the remains of the ancestors of the Indian tribes of the present day.

As will at once be perceived, the present collection, taken as a whole, presents a remarkable uniformity of cranial conformation. This is of a strongly brachycephalic type.* I have not measured the entire collection, but having selected what appear to be the fairest examples of the various forms, their mean length appears to be about 6.25 ins., and width 5.6 ins., giving a cephalic or latitudinal index of .905, only two falling below .800. In this estimation, however, were included both artificially compressed and, so far as I can perceive, normally shaped skulls. Separating these two from each other, the cephalic index of the supposed

* Linnaeus's term “*plagiocephalic*” is emphatically descriptive of the more common form of American skull, and may be conveniently used to distinguish the broad head with flattened forehead, so characteristic of the greater part of the American races, as, in fact, it was used by him.

TABLE OF MEASUREMENTS OF ANCIENT PERUVIAN SKULLS.

SPECIMEN.	1. General.			2. Breadth.				3. Radial.				4.	5. Longitudi- nal Arc.			6. Transverse Area.			7. Indices.			8. Con- tents.		9. Sex.			
	Length.	Breadth.	Height.	Postorbital.	Frontal.	Parietal.	Occipital.	Zygomatie.	Frontal.	Vertical.	Parietal.		Occipital.	Maxillary.	Occipital.	Frontal.	Vertical.	Parietal.	Occipital.	Latitudinal.	Maxillary.	Facial.	Capacity.		Weight of Brain.		
No. 1 A	59	45	56	37	47	51	43	58	40	48	45	12	40	96	46	50	46	14.5	11.6	12.9	18.6	840	..	4.	73.5	M.	
" 2 A	62	47	50	31	40	47	38	45	38	48	44	36	36	130	43	45	42	12.7	10.3	11.2	12.8	768	..	4.	87.0	F.?	
" 3 A	62	47	44	33	41	48	40	42	43	45	34	34	36	129	44	47	44	13.5	11.0	12.0	12.8	806	..	6.	64.0	M.?	
" 4 A	64	52	54	35	41	50	41	50	43	43	40	38	40	128	45	45	45	13.5	11.4	12.3	12.9	812	..	3.	73.7	M.	
" 5 A	64	50	50	38	46	58	43	53	46	48	48	34	38	131	48	46	40	13.0	12.7	13.6	14.1	1010	..	6.	72.0	M.	
" 6 A	64	55	55	37	47	54	47	54	33	46	46	34	37	134	46	47	46	13.0	12.1	12.9	13.8	875	..	6.	85.0	M.?	
" 7 A	57	53	52	36	47	57	46	54	41	46	47	32	34	130	43	43	45	13.0	12.1	13.1	13.7	1030	..	4.	77.5	M.?	
" 8 A	64	56	56	37	45	55	42	51	43	47	47	37	37	132	45	48	43	13.0	11.6	12.3	13.7	869	..	6.	79.2	M.	
" 9 A	64	56	56	37	45	55	42	51	43	47	47	37	37	132	45	48	43	13.0	11.6	12.3	13.7	869	..	6.	79.2	M.	
" 10 A	63	55	55	36	44	51	42	52	44	46	47	33	34	132	45	41	42	13.0	12.1	12.7	13.1	874	..	7.	78.0	M.	
" 11 B	62	55	50	34	46	57	42	47	48	46	49	33	32	132	46	47	43	13.6	11.4	12.7	13.2	935	..	1.	90.0	M.	
" 12 B	62	55	50	34	46	57	42	47	48	46	49	33	32	132	46	47	43	13.6	11.4	12.7	13.2	935	..	1.	90.0	M.	
" 13 B	62	58	57	37	47	56	44	50	43	46	47	35	37	133	46	47	43	13.6	11.8	12.9	13.6	887	..	2.	81.0	M.	
" 14 B	62	58	57	37	47	56	44	50	43	46	47	35	37	133	46	47	43	13.6	11.8	12.9	13.6	887	..	2.	81.0	M.	
" 15 B	64	54	53	35	49	53	41	49	41	44	44	37	38	134	46	48	40	13.7	11.0	12.0	12.7	853	..	4.	71.5	F.?	
" 16 B	64	54	53	35	49	53	41	49	41	44	44	37	38	134	46	48	40	13.7	11.0	12.0	12.7	853	..	4.	71.5	F.?	
" 17 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 18 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 19 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 20 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 21 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 22 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 23 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 24 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 25 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 26 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 27 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 28 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 29 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 30 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 31 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 32 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 33 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 34 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 35 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 36 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 37 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 38 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 39 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 40 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 41 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 42 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 43 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 44 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 45 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 46 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 47 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 48 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 49 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 50 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 51 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 52 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 53 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	1000	..	4.	86.76	?
" 54 B	62	61	53	39	51	59	46	57	43	47	48	36	40	135	45	45	42	..	12.6	13.6	14.1	11.6	10				

normally shaped crania is about .873, the greatest being .935, and the least .812, and of the clearly artificially deformed or flattened ones about .979, the least being .861, and the greatest 1.32.

These figures show how very much the latitudinal index is exalted by fore and aft compression of the skull, and the almost equally great effect in increasing the vertical height will be seen in the fact that the altitudinal index of the normal skulls is about .843, the greatest being .919, and the least .806, whilst in the compressed ones the altitudinal index rises in the mean to .878, the greatest being .919, and the least .824.

As regards the comparative cubic capacity of the two kinds of skull, I am not able to speak positively, as, in order to determine this with any accuracy, it will be necessary to separate, so far as is possible, the male and female skulls for the reason, first, that the latter are of course much less capacious, and secondly, that in the case of artificially deformed skulls, if it be true as most writers state that it is only the males who are subjected to treatment, no comparison can be instituted unless the latter are eliminated. But so far as my experiments have gone they would have served to confirm the general opinion, that the compression has no effect in diminishing or enlarging the cranial capacity—nor is it likely that it should. The mean capacity of the larger skulls, which may be regarded as males, appears, so far as I have gone, to be about 80 cubic inches, equivalent to a brain of about 45 ounces, roughly estimated. This capacity and the measurements above cited show that the crania generally are of small size.*

It will also be seen when comparing the numbers I have given with those afforded by Professor Wilson (p. 222), taken from a series of ancient crania from North American mounds and caves, that they very nearly correspond. In the mound skulls the mean length is given as 6.54 ins., and width 5.67, the cephalic index being .861, and in those from sepulchral caves, as 6.62×5.78 , with a cephalic index of .873; figures that show clearly enough that even at that distant period there must have been a great similarity between the inhabitants of the western part, at any rate, of North America and of the seaboard regions of South America, and, it may be added, with the modern inhabitants of the same regions.

Besides these brachycephalic crania, which form the bulk of the present collection, there are a few of a more elongated form; but these, however few in number, are of especial interest, opening up as they do the interesting question as to whether there is really more than one type of skull to be found among the ancient

* This is in accord with the statements of all observers.

Peruvians, and also the still wider one whether there is more than one type peculiar to the American Continent.

As is well known, Dr. Morton was of opinion, and no man's opinion can be more weighty, that there was but one American type of skull, exclusive of course of the Esquimaux, and that of strongly brachycephalic form. According to Morton, the Indian skull "is of a decidedly rounded form. The occipital portion is flattened in the upward direction, and the transverse diameter as measured between the parietal bones is remarkably wide, and often exceeds the longitudinal line." The forehead is low and receding and rarely arched,—a feature that is regarded by Humboldt, Lund and other naturalists as characteristic of the American race and serving to distinguish it from the Mongolian. The general question whether a diversity of type exists among the native races of America down to the present day, need not here be disussed; but I would simply remark that, so far as my own observation of collections goes, there is every reason to believe that the brachycephalic type exemplified in the present collection and shown on a somewhat larger scale, but with precisely the same essential features in the Chinook Indians and in the natives of Vancouver's Island, prevails amongst all the native tribes, at any rate in the seaboard regions of North and South America, from Nootka Sound round the coast of Patagonia and up the east coast, within the historical period, to the Caribee Islands,—whether it extended further north on the Atlantic shores in earlier times I do not know.

With regard to the dolichocephalic type of American skull, and the tribes amongst which it exists in North America, I need merely refer you to Professor Wilson's copious data, at the same time expressing my belief that it will be found to prevail, or to have prevailed, throughout the greater part of the central or east central parts of America, both North and South, from Canada to Tierra del Fuego. The whole question is ably stated and argued by Professor D. Wilson, who, with Mr. J. H. Blake and others, is of opinion that not only are two distinct forms of skull to be found in the ancient cemeteries,—one rounded or globular, and the other elongated,—but also that two distinct types of skull are at the present day to be observed amongst the existing American populations. The evidence to this effect, both as regards the ancient skulls, cited by Professor Wilson, is amply sufficient to decide the point.

The evidence of the existence of a dolichocephalic type afforded in the present collection is not very abundant, but is nevertheless decisive. And if it be true, as is extremely likely, that the practice of artificial deformation of the skull has, in most cases, originated in a desire simply to increase or to add to the

natural features, we cannot fail to perceive, in the elongated skulls from Titicaca, that that peculiar kind of deformation has arisen from a desire to add to the attractive features of the peculiarly elongated form of skull, of which several instances are presented in the present collection.

The Director read the following paper :

On ANCIENT PERUVIAN SKULLS [with plate IX]. By J. BARNARD DAVIS, M.D., F.R.S., V.P. Anthropological Institute.

PROFESSOR AGASSIZ during his late travels went to Callao, in Peru, and when there he received great attention from Her Britannic Majesty's Consul, Mr. Thomas J. Hutchinson. Mr. Hutchinson made a fine collection of skulls of the ancient Peruvians, and other antiquities from the Peruvian cemeteries during the stay of Professor Agassiz, and presented the whole collection of three hundred and eighty-four skulls and other articles of pottery, etc., to him for the museum at Cambridge, in the United States. I send a copy of the letter of Professor Agassiz, who states the great value of the collection, and expresses his warm thanks for it.

Another fine collection of Peruvian skulls has been sent to the Anthropological Institute by Consul Hutchinson, which I am informed is being exhibited. I have no doubt it will attract much attention, and will receive considerable elucidation from the observations of craniologists present, particularly from the President. At the request of Consul Hutchinson, I have forwarded a number of articles of Peruvian pottery obtained from the cemeteries, to be exhibited at the same time.

It will not be necessary for me to say anything of consequence respecting the skulls, as this will be done more accurately and more copiously by very competent gentlemen, I have no doubt. I will merely refer to one point, *i. e.*, the so-called *long* skulls of the ancient Peruvians, which was treated more at length in the "*Thesaurus Craniorum*", p. 246. It is there stated that Professor Morton, the distinguished American craniologist, in the early period of his researches, considered that there were both natural dolichocephalic and brachycephalic crania among those obtained from the Peruvian cemeteries. He subsequently saw his mistake, and perceived that the longer examples had obtained this character merely from the interference of art. A more recent investigator, Dr. Daniel Wilson, of Toronto, who has acquired a deservedly high reputation in various pursuits, both scientific and literary, has also devoted much attention to craniology. Having the opportunity of ex-

amining many collections of Peruvian skulls, particularly that made by Mr. J. H. Blake, now at Boston, in Massachusetts, he has revived the former opinion of Morton.

Dr. Wilson expresses his conclusion upon the subject emphatically in these words: "It is not at all necessary for the confirmation of the opinion reasserted here, that there are two essentially different types of Peruvian crania, to affirm that the form of the elongated skull never owes any of its peculiarities to artificial compression."*

The view thus taken by Dr. Wilson, which is that the dolichocephalic Peruvian skulls are of natural form, was combated in the "*Thesaurus Craniorum*." Since that book was printed, I have received ample and perfectly satisfactory evidence as to the truth of the proposition that the longer skulls owe this quality to artificial means. By the politeness of Dr. J. Aitken Meigs, of Philadelphia, I have obtained two Peruvian skulls, which at one period belonged to Dr. Morton's collection, as a specimen of each kind. One of these is brachycephalic, the other is dolichocephalic; but they both present distinct traces of artificial distortion. This fact is conclusive, but, besides, by the politeness of another eminent American man of science, Dr. Jeffrys Wymann, professor of anatomy at Harvard University, this conclusion has been again and still more distinctly established, by an examination of Mr. Blake's collection itself, whence chiefly Dr. Wilson obtained materials for the foundation of his opinion. Dr. Wymann has been so good as to examine Mr. Blake's collection with its present owner, Dr. Warren, of Boston, and wrote me the result on the very day of his visit. I may here introduce an extract from Professor Wymann's letter:

"The upshot of the whole is, the crania do not confirm Dr. Wilson's statement. One of Dr. Wilson's points, in fact it is his chief point, is that the skulls are natural because they are symmetrical, and that it is next to impossible that a distorted skull should be other than unsymmetrical. I have carefully examined eight elongated Peruvian crania with reference to this point, and find that they are quite as symmetrical as any ordinary crania, in fact, neither Dr. Warren nor myself could detect any asymmetry in the general outlines. The mode of employing pressure by bandages would indeed be likely to produce symmetry. Curiously enough, it so happens that the skull represented in fig. 59 of Dr. Wilson's work is the only one in which asymmetry was detected, and in this the most prominent part of the occiput projects farther on the left than on the right side."

This fig. 59 is given in Dr. Wilson's book as a *natural doli-*

* "*Prehistoric Man*," 2nd edition, p. 449.

chocephalic skull; but I informed him, on the publication of the work, that it had obviously been distorted by art. Dr. Wymann goes on to say: "Both Dr. Warren and myself were agreed on this point. In addition, this cranium as well as that of the child (figs. 60 and 61) in Dr. Wilson's book, presented the usual appearances seen in artificially distorted crania, particularly in the contraction of the circumference of the cranium between the middle and hinder portions. It seems to me, therefore, that the criticisms of Dr. Wilson's statements in the 'Thesaurus Craniorum', p. 246, are quite correct. I cannot conceive his having arrived at the views he sets forth, and it is rather odd that the skull he has chosen to exemplify his views, should be the one, out of the whole, showing (from his own stand-point) the incorrectness of them."

I do not doubt that the extensive collection of skulls sent by my friend Consul Hutchinson, will afford ample and conclusive evidence upon the questions here discussed.

I may then at once revert to the Peruvian pottery which I have sent for exhibition on the present occasion. Upon this I shall say very little, scarcely more than give a catalogue of the specimens exhibited. It will be understood that this pottery is derived from the same tombs, or *huacas*, in which the skulls were met with. It was the practice of the ancient Peruvians to inter with the dead a great variety of objects. Some were of gold and silver, various implements, some of them of other metals, some of textile materials, and a vast diversity of pottery. From this fact, of the interment of such numbers of articles with the dead, it may be inferred with much probability that the Peruvians were not without some hope of a life beyond the tomb. The pottery indicates considerable skill and ingenuity in its execution, for they did not possess the famous and ancient "potter's wheel", a simple machine above their powers of invention. It is all made by hand, and there is no doubt that, like the pottery of the ancient Britons, it was by the labour of the women's delicate fingers that it was produced. It may be noted that none of the Peruvian pottery is thoroughly baked, so as to fuse the body and to render it very hard. On the contrary, it is more like *terra cotta* than anything else, yet it is baked somewhat more thoroughly than *terra cotta* usually is. A large number of the specimens, indeed the majority, exhibit imitations, more or less successful, of animal forms, sometimes of vegetable forms; the large majority typify the human form. It also occasionally occurs that the forms of the vessels have a grotesque character, and at times give expression to the humour of the people who made them. Skill and taste have been abundantly displayed in the modelling of the almost endless designs of these vessels. Much of the pottery

is of a black colour, from a metallic oxide introduced into the clay; other vessels are made of lighter coloured clays, and all are ornamented in many peculiar styles. Some ornaments, which have been regarded as of classical origin, may at times be found upon Peruvian pottery, such as the *fret* and *scroll*, which were not unknown to the Greeks. These and other accidental coincidences have been employed by some as arguments to support the delusive notion that the Peruvians were of European origin. This kind of erroneous deduction from coincidences has been widely employed in the philosophy of anthropologists, who explain things upon hypothesis. Sometimes it has betrayed even eminent men. I remember being astonished some years ago, to find the very distinguished and accomplished Councillor Thomsen, the founder of the grand Ethnological Museum at Copenhagen, to take this view. Looking at some of the beautiful feather helmets with crests in the museum, made in the Sandwich Islands, he told me that these very helmets proved that the Greeks had had communication with these Islands, for here we saw the Greek crested helmet. A common decoration in Peruvian pottery is produced by placing small grotesque animals in different positions on the vessels. The chief use of most of these curiously formed vessels is considered to have been for holding and for carrying water. As they have handles, they are *water vessels*, articles of vast importance in a climate like that of Peru. From their porous nature they would keep the water cool. A hint has been thrown out that some of them may also have been employed for sipping an infusion of that great exhilarator, the coca (*Erythroxylon coca*), through a silver tube. This is the mode of sipping the *Maté*, or Paraguay tea, but whether the coca be taken in the same way is rather uncertain.

The specimens sent for exhibition are: vessels in *black ware*.

No. 1. An amphora, with two ears or handles. This closely resembles the amphoræ of the Greeks and Romans. It has been elaborated with great care. The marks of the tool are seen all over its surface.

No. 2. A curious water vessel modelled in the exact form of a gourd, with all its natural prominences. Upon one side is modelled the bust of a woman to form the orifice, with her arms and pendent breasts. Her face, with the ears, eyes, nose, lips, and teeth, are all expressed. In the ears are large ear-rings. The head has been modelled as a separate piece, and been attached to the vase afterwards. The potter's finger marks are seen in this attachment. I believe the gourd is a cast from a clay mould taken from a natural specimen, as there is an appearance of a seam along the middle of the bottom. The woman's head is broad, and brachycephalic according to nature. The nose is de-

pressed, like that of a negro, and the hair is represented in tufts; neither of which is correct to nature, but more for the convenience of the potter. This vase is an admirable piece of pottery. The marks of the modelling tool are very obvious on the neck, but totally absent from the gourd, or cast part, which, in fact, supports the view that the gourd is made from a mould.

No. 3. Water vessel, which has a double tube rising up from the belly to join in a single one for the mouth. This combination of the tubes forms a handle. It is neatly decorated on the sides of the upper part with four grotesque birds, having long bills. The depressed field upon which the birds are placed appears to have been formed by an impression.

No. 4. Another handsome water vessel with the double tube for a handle, resulting in the single mouth. This vase is neatly ornamented with three oval prominences, like olives, conjoined by a cord on each side, each of the series of three being equally conjoined by the cord. On the outer sides at the angles at which the tubes rise, a small bird is attached, and a minute monkey at the angle at which the single tube rises. From the marks of seams at the sides, it is probable that the body of this vessel has been made in two halves.

No. 5. Another water vessel, in the form of a depressed globe, which has a prominent spout like that of some teapots. On the opposite side is a grotesque seated figure, having a square head, a prominent nose of a *natural American form*, and a large beard, holding a cup upon his knees. A flat handle is formed conjoining the back of the figure with the spout. [See plate ix, fig. 1].

No. 6. A small *whistling vase*, formed of the body of a bird with long beak. There is a small hole above the bird's head to produce the sound. Wings and feathers are modelled on the sides of the vase.

No. 7. A small cylindrical vase, or urn, with a row of indented ornamentation near the top. This vessel closely resembles some of the ancient British urns. The marks of the tool upon it fully indicate the patient labour by which this pottery has been produced.

No. 8. A vase formed of three conjoined almost cylindrical bodies, which are surmounted by a tube on each side, running into the terminal spout. There is a very minute bird perched at one of the angles of the tubing.

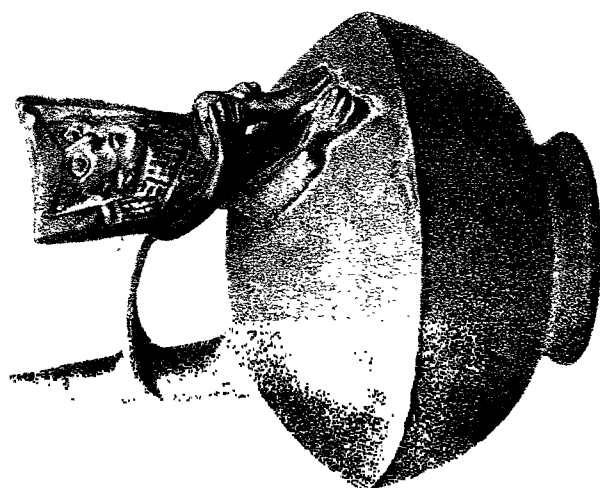
Red Pottery.

No. 9. A semi-conical water vessel, with a double tubular handle on one side, ending in a tubular mouth. The flat side of the vessel is elaborately decorated with the squat figure of a man standing, holding two long objects in his outstretched arms. This man is a grotesque, has long canine teeth like the tusks of a boar,

Fig. 2



Fig. 1



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a singular helmet on his head, on the front of which is an animal's face, a cravat round his neck with bands falling down before. This may be intended for a Peruvian deity. The whole is coloured black and white in contrasts. There is a dog-tooth border to this sculpture, which terminates in a grinning head at each extremity.

No. 10. Another depressed cylindrical vase, with a teapot spout. A bird has balanced the spout at the opposite end of the handle. This vase is decorated with red lines, having scroll ornaments between them.

No. 11. A vessel much like a bag. Has two ears, and the neck is ornamented with an animal having four feet and a tail. This vessel is decorated by lines running lengthwise, between which are placed wavy lines. It has been coloured white, the decoration being dark red, almost black.

No. 12. Another bag-like vessel, or jug, ornamented at the neck with portions of a man's head. The ears, eyes, nose, and mouth stand out, and the two hands project from the side of the jug. The nose is *natural*, or truly American.

No. 13. A small neat vessel, in shape resembling the body of a squat man with his hands on his knees. He is dressed in a tunic, which is fastened by two strings upon his breast. The wide spout is placed at the back of the head. The head is modelled with great accuracy, and exactly presents the American nose. The vessel may be regarded as exhibiting the model of an ancient Peruvian. [See plate ix, fig. 2].

No. 14. Two minute vases, forming almost a pair, ornamented with black upon white ground, and having ears at the necks.

No. 15. A neat shallow vessel, which is ornamented outside with black in diamonds upon the red ware, and then white lines between. It has a row of three lines, two black and a white line between, inside the neck. Ornamented outside the rim also. This vessel is remarkable from being made of a red pottery, which has numerous minute particles of gold interspersed in it.

No. 16. Another small discoidal vessel, ornamented in a very similar diapered manner. It has, besides, the fret pattern on the extreme circumference. These two vessels are decorated with much elegance.

No. 17. A painted water vessel with handle much fractured. It is a red body painted white at the upper part, and birds drawn upon it in a brown colour.

No. 18. A hemispherical cup.

Anthropologically considered, this exhibition of specimens of ceramic art proves incontestably that the Peruvian potters worked from nature from the Peruvian people themselves, a people who possessed brachycephalic, broad heads, well exemplified in No.

13, and had a nose which occurs only in its pure form as a race characteristic in America, but upon that continent ranges from a high north latitude down to Peru, if not further south. Since I first observed this peculiar nose, I have long been accustomed to regard it as the true *aboriginal American nose*, which may require a word of explanation. It is an *aquiline nose* which distinctly differs from the Roman nose, as well as from that of the Jew. It is at once appreciated by the eye, but perhaps is not so easy to describe in words. No one has depicted it so well as Catlin, who spent so many years of his life in delineating the Indians of America. I possess a large work executed in pencil by his own hand, in which he has drawn facsimiles of all his paintings, and this peculiar nose is represented in the men and the women also of all the tribes. It is, as it were, a *crestic nose*, beginning to curve at the upper part, and curved uniformly, or nearly so, to the tip. It is a decidedly handsome feature, of which the native races of America have reason to be proud.

This exhibition also throws much light upon the state of civilization of the ancient Peruvians. It shows that although they were highly advanced in many arts, as weaving, dyeing, metallurgy and the ceramic, in which they had acquired a knowledge of moulding, casting and producing a very permanent pottery, ornamented with taste in numerous ways, yet they knew nothing of one of the simplest and earliest inventions of man, the potter's wheel. This fact proves conclusively, as far as any negative can do, that they were an *aboriginal people*, whose industry was not derived from any people of the old world, but was strictly native and indigenous. Nevertheless, their skill and their taste were unquestionably highly cultivated. We have likewise obtained evidence of a sufficiently satisfactory character, that their aspirations were not bounded by the horizon of this sublunary world, but extended beyond the tomb. This evidence assuredly is most interesting to us as fellow mortals, and engages our sympathies infinitely more than all besides.

The following paper was read by the author :

On the PERUVIAN POTTERY sent by CONSUL HUTCHINSON. By
JOHN E. PRICE, F.S.A.

WITHIN the last few days I have had the opportunity of inspecting the interesting collection of human skulls, pottery, and other relics, sent over from Peru by Consul Hutchinson to the Museum of the Institute. It is fortunate for us, that the description of this marvellous series has fallen to the able hands of our esteemed President and Dr. Barnard Davis, whose collective labours will

probably embrace all points of interest, and leave but little else to be said concerning the collection. There are, however, one or two minor points for reflection which have occurred to me, especially with regard to the pottery discovered in the graves at Ancon, to which I would briefly direct your attention.

From the information furnished by Consul Hutchinson, there is but little to assist us in determining any date as to these remains. He mentions, however, that some of the skulls were taken from a place of interment, which after the conquest by Pizarro had been rifled by the Spaniards in their search for treasure; it is to be assumed, therefore, that they belong to a period anterior even to the subjection of the country by the Incas, and represent, indeed, some of the numerous aboriginal tribes. From the Spanish conquest in the early part of the sixteenth century, history leads us through some four or five centuries of an advanced and flourishing state of civilization to what is usually termed *Pre-Incarial* times, a period of unknown duration, one of which no literature whatever exists, and which save by a careful investigation of the remnants of sculpture, carvings, and architectural remains, can only be illustrated by such discoveries as the present. Among all such relics, pottery is one of the most useful for comparison, for as illustrations of the requirements of domestic life among uncultivated tribes, there are few things more durable or lasting than those of earthenware. Fictile vessels must have been among the earliest manufactures of man, a necessity indeed of his existence, a want which must be supplied; food must be prepared for consumption, and receptacles for water must be had, even in the most primitive condition which can be imagined; accordingly, the clay usually to hand becomes employed, means are adopted to harden it for wear, and a way becomes opened for the active exercise of human ingenuity in ornamentation and design. A great similarity though exists in the simple forms as fabricated by most ancient nations. The specimens before us, primitive though they be, forcibly remind us of classic types, and yet they are such as required no especial training or education in the higher principles of art to fabricate. A vessel is wanted for suspension, to hold water or other liquid, and to allow of being carried from place to place; the idea, therefore, of such globular vessels with rings on either side the neck, by which to sling or affix to the body, becomes a natural one, and it matters little whether this be represented by those upon the table, by a Roman or mediæval amphora, or the pilgrim's costrel of early English times. I enclose a sketch of two such vessels found some years ago in London, and of about the same dimensions as the largest of those from Ancon; the similarity is apparent.

The pottery, therefore, may or may not date from a remote antiquity; there is nothing about it decisive in this respect, it is roughly made, evidently from the native clays, and imperfectly baked. It has been remarked that there is no evidence of the use of the potter's wheel, and I believe it is pretty generally understood that the Indians of South America were unacquainted with this useful invention,—a contrivance, the origin of which, so far as regards the ancient nations in the east, is lost in obscurity. There seems to be but little attempt at decoration, a few lines in a yellow-tinted pigment appear on some of the smaller cups, and on others there is a white substance somewhat analogous to a glaze. Some such attempt at decoration is usual with early tribes. In Nicaragua the natives glaze their pottery with a kind of varnish lightly rubbed over the vessels, and in Australia and New Zealand it is customary to smear them with melted Kauri gum. The specimens of black Peruvian pottery exhibited by Dr. Davis hardly come within these observations. They seem to belong to a different style of art, are many of them of grotesque form, marvellously light, and of a much finer kind of pottery than the specimens from Ancon. The colour of this blue-black slate-coloured ware may have been derived from some metallic oxide in the clay, but (what would be still more curious and interesting) why should not the Peruvian potters have been acquainted with the principle of suffocating the fire of their kiln at a certain degree of heat, and thus ensure this uniformity of colour? I refer to the smother kilns as illustrated by the late Mr. Artis at the Roman potteries of Durobrivæ.

In the present collection there appears but a small proportion of pottery to the number of the graves which must have been examined in order to produce so large an array of skulls. This is accounted for by Consul Hutchinson, from the fact of the difficulty he found in collecting, packing, and sending a large quantity; he mentions, however, that most of the sepulchres contained pottery. This is a clear illustration of the practice among the Peruvians of interring such objects with the deceased, and resembling in this respect the customs of many other nations. We need hardly refer to its almost universal existence among the Romans. In far off China it has been observed. Nicolo di Coti mentions it as existing among many of the Indian tribes. The Moldavians also, the Caubees, and many others may be cited. The objects buried usually comprised articles prized by the deceased during life, receptacles for food or wine, clothing, implements of war, with many other things likely to be required on the last long journey. Of such interments, a series in New Granada, Ecuador, Peru, and Chili, with other places in South America, has been well described by Mr. Bollaert, F.R.G.S., with

many curious details concerning the discoveries made by him among the Huacas of that country.

Among the objects on the table are two pieces of netting; these seem the most difficult to reconcile with a remote antiquity. The preservation is so good, they are so well made, and bear so striking a resemblance to such fabrics as used in the present day, that one can hardly imagine them as having been interred for centuries, yet it appears to have been usual for such pieces of network to be included among the objects selected for burial. It would be interesting to enquire how far this has been observed in other nations. With tribes like these, situated near the coast, it may have been thought probable by the survivors that such things would be required by the defunct. In Granada, however, and among the Chilchas of South America, the net seems to have been adopted at religious festivals as a symbol of death, one was cast over the principal musical performer as a reminder, even in times of rejoicing, of the proximity of the last enemy. A strange resemblance here to the custom of placing a skeleton among the guests at a banqueting table in classic times. There are yet many other such matters which might be referred to, for instance, the metal found within the mouths, etc.

Colonel A. Lane Fox exhibited several specimens of ancient Peruvian pottery.

Dr. Richard King exhibited flattened American skulls and drawings illustrative of the method of flattening employed by certain of the native tribes.

DISCUSSION.

Professor HUGHES pointed out that some of the pottery bore evident marks of the potter's wheel, though that may have been of the rudest description; and remarked that it was not safe to infer the non-existence of the potter's wheel from the absence of the usual concentric markings in a few specimens, as it was quite possible they might have been obliterated during subsequent ornamentation, affixing of handles, etc.

Mr. C. HARRISON, F.S.A. exhibited in illustration of these communications twenty-three photographs, being part of the series of photographs from collections in the British Museum, published at his expense by Messrs. Mansell and Co. These photographs represented various antiquities from Peru, principally terra cotta vases of quaint forms. Among them was a stone seat from the mountain of Hoja, Ecuador; a bronze buckler from Ipijapa in the same country; a remarkable paddle and staff

from a tomb at Yca; stone corbels from the city of Huaman-chuco; and vases from Truxillo, Chocope, Cuzco, Lake Titicaca, and other localities.

The President read the following paper:

HUMAN SKULL and FRAGMENTS of BONES of the RED DEER, *etc.*, found at BIRKDALE, near SOUTHPORT, LANCASHIRE. By Prof. GEORGE BUSK, F.R.S., President Anthropological Institute.

IN carrying out the main sewerage of Birkdale, an old land surface deeply covered with blown sand was proved to exist over the larger part of the area sewered. This surface commences in the lowest part of the ground by Fine Jane's Brook as a peat bed, and gradually thins westward into a sort of peaty soil, and upon the latter were found the above remains. The geology of the district is fully mapped out and described by Mr. T. Mellard Reade, F.G.S., the Engineer of the works, in a paper read before the Liverpool Geological Society, November, 1871, entitled the "Post-Glacial Geology of Lancashire and Cheshire."

In cutting the sewer in Gloucester Road, at a depth of 8 feet, the old land surface was reached, and at a point marked X on Mr. Reade's map, plate 1, immediately opposite the shop of Mr. Kershaw, the human skeleton to which the skull belongs was found. It lay on the south side of the trench, and the skull was severed from the rest of the bones by the sheet piling of the trench. The remainder of the skeleton is still in the ground as it would have been difficult to extract it. Mr. Kershaw, who secured the skull and the accompanying fragments of Red Deer bones, *etc.*, has presented them to the Museum of the Royal College of Surgeons.

The skeleton was hard down in the peaty soil bed, and covered with blown sand. It is difficult to estimate its age, but it occurs on the top of a bed, the equivalent of which in Cheshire, is, according to Mr. Reade, the peat bed that overlay the Leasowe skeleton, and above an extension of which are the beds at Hoylake from whence great numbers of Roman remains have from time to time been extracted. The presence of the bones of the Red Deer seems to point to the fact that the skull is of considerable age, and as the blown sand extends inland at least one mile this also leads to the same conclusion. The blown sand itself also shows unmistakable evidence of age from the numerous signs of previous cultivation at various levels intercalated in it, especially towards its eastern or landward margin.

The land surface, of which that in Gloucester Road is an extension, is shown in section *d* to *e*, plate 4, of Mr. Reade's work, and always rests upon either blue laminated marine clay,

or blue silt (on the *latter* in Gloucester Road). These underlying beds, which occupy in Lancashire an area of about seventy-five square miles, have been denominated by Mr. Reade, the "Formby and Leasowe Marine Beds." The antlers of the Red Deer have been found in these beds *underlying* the old land surface at points 1 and 2, plate 1; and at the same places various marine shells occur.

In the explanatory section, plate 1, the relative positions of the Birkdale and Leasowe skeletons are marked,—it is, however, necessary to bear in mind that the recent silts, "coloured green," are not present at Birkdale at the point where the skull was found, and that there, as before described, the upper bed consists wholly of blown sand resting directly upon the old land surface.

The skull found in the excavations of Wallasey Pool (now in the Liverpool Museum) is smaller than either the Birkdale or Leasowe skulls, but is in character more like them than are any of the other skulls in the Museum. The correspondence between the Birkdale and Leasowe skulls in measurement is remarkable, the former has, however, a more arched parietal.

The skull is very heavy, but this may partially arise from the infiltration of peroxide of iron which is common to the blown sand. Other animal bones have been found on the same land surface at various points, and generally are coloured blue in places by a deposit of phosphate of iron. The skull, it is perhaps necessary to state, was washed and "cleaned" by Mr. Kershaw; the bones were named by Mr. Thomas J. Moore, C.M.Z.S.L., Curator of the Liverpool Museum.

The meeting then separated.

APRIL 22ND, 1873.

Professor BUSK, F.R.S., *President, in the Chair.*

THE minutes of the previous meeting were read and confirmed.

J. H. LAMPREY, Esq., was elected a corresponding member; GEORGE HARTLEY, Esq., H.B.M.'s Consul at St. Paul de Loanda, was elected a local secretary for Loanda.

The following presents were announced, and the thanks of the meeting voted to the respective donors:—

FOR THE LIBRARY.

From the SOCIETY.—Proceedings of the Royal Society, vol. xxi, No. 143.

From the EDITOR.—La Revue Scientifique, Nos. 40, 41, and 42, 1873.

From the EDITOR.—The Food Journal for April 1873.

From the SOCIETY.—Bulletins de la Société d'Anthropologie de Paris, vol. vii, No. 4.

From the EDITOR.—The Sanitarian, vol. i, No. 1, April 1873.

From the SOCIETY.—Proceedings of the Society of Antiquaries of London, vol. v, No. 6.

From the SOCIETY.—Mémoires de la Société des Naturalistes de la Nouvelle Russie for 1872-3.

From the EDITOR.—The Spiritualist for April 15th, 1873.

From the AUTHOR.—The Identity of Israel with the English and Kindred Races. By Dr. Protheroe Smith.

From the SOCIETY.—Journal of the Royal Asiatic Society, vol. v, Part 3.

From the ASSOCIATION.—Transactions of the Social Science Association, 1872.

From JAMES BURNS, Esq.—Human Nature for April 1873.

From the INSPECTOR GENERAL.—Report on the Census of Bengal, 1872. By H. Beverley, Esq.

From the INSPECTOR GENERAL.—Report on the Census of New Zealand, 1871. By John B. Bennett, Esq.

From the EDITOR.—Nature (to date).

The Director read the following paper:—

RELIGIOUS BELIEF *of the OJIBOIS or SAUTEUX INDIANS, resident in MANITOBA and at LAKE WINNEPEG.* By A. P. REID, M.D., L.R.C.S.Edin., etc., etc., Professor of Practice of Medicine, Dalhousie College and University, Halifax, Nova Scotia, Canada.

At the request of my friend Sir Duncan Gibb to send a communication on Indian customs, I thought the subject I have chosen would be more appropriate than details of their daily life, which are for the most part very similar in all tribes, and have been again and again described by travellers. Their religious opinions, on the other hand, have been much less referred to.

I spent the greater part of the years from 1860 to 1864, amongst ten tribes, stretching from Manitoba* to Vancouver

* Pronounced Man-e-tau-bah (the last a is pronounced very long, the o short).

on the Pacific, but in ordinary intercourse it is very difficult to find out their ideas of religion, they being reluctant to talk much on this subject to strangers. I lived among the Sauteux (resident at Lake Winnipeg) eight months, and during that time picked up the material of the following description.

The Sauteux originally belonged to the Lake Superior country, but the old North West Fur Company (prior to the Hudson's Bay Company) induced many to emigrate to Lake Winnipeg, as they were a more active race and better hunters than the Swampee tribe, who originally occupied that district, and who have to a great extent been displaced by the new-comers. The chief tribes in Manitoba and on the British prairie are the Assiniboines and Crees, who rarely own a canoe, and live on the prairie. The Sauteux or Ojibois, and Swampee rarely own a horse, confining themselves nearly altogether to the fishing and hunting on the lakes in their immediate vicinity.

On first going to live amongst them, it appeared to me strange that the Indians, especially the younger men, were rarely called by their Indian names, and on asking their name they said call me "Niche" or "Nich-e-wah" (Indian word for brother or friend) or "bear" or "John" or "Tom" and such like, and it was very difficult to get any other appellation from them. In time I found that there were two reasons for this,—Firstly, many were averse to be known to the whites by their appropriate names,—secondly, that they had no name, which I will now explain.

It is held that the name is in some way prophetic either of the man's station in this life or his future life, and was not assumed until this condition became known, which took place at manhood after the following ceremony had, to some extent, lifted the veil which divides the known from the unknown.

Each young man, at a chosen time, spent a week in feasting—gorging himself with all he could swallow. He then picked out some quiet place, where he would be neither observed nor disturbed, to sleep, or as the Indians say, to dream. During this period they neither eat nor drink, for doing so would render their efforts vain.

The sleep lasts from three to seven days owing to the endurance of the subject, and during this time the Great Spirit comes to the Indian in the form of a dream, and this makes known to him that portion of his future which is to be vouchsafed. The longer the man can abstain the more pleased is the Great Spirit, who does not visit him until his fortitude is about giving way, when he sinks into the *dream*, and in spirit sees his future going on from this life even to that after death.

The greatest number can only fast three or four days, and they cannot get a glimpse of what is in store for them in the spirit

world, but now and then a man fasts seven or eight days, and the great Spirit as a reward for his endurance may show him a high station in the land of the hereafter.

The Indian goes back to his tribe after the dream (looking much the worse for his abstinence), relates to them what the Great Spirit told him, and assumes a name explanatory of this destiny.

An old fellow I was well acquainted with, rejoiced in the cognomen of "*Co-se-se-kan-eh-kway-kaw-po*," signifying "The man who standing up his head reaches the heaven or sky." He had fasted and slept eight days, at which the Great Spirit was much pleased, and made known to him that though he should not occupy any position in this world or be much looked up to, yet after death he should make him the ruler-in-chief—accountable to himself alone,—of the tract of country, bounded by Lake Winnipeg on the east, and the lakes Manitoba and Winnipegosis on the west (about 200 miles long by from 25 to 58 wide.) The old fellow firmly believed in this destiny and bore all the ills of life without complaining. His opinions were but little respected, in fact he was both lazy and a drunkard, but what need had he for position in this world when such a brilliant future awaited him?

Another was called "*Caugh-ske-kaw-bunk*," signifying "The rays of light before the sun appears on the horizon." The Good Spirit informed him that he was to be a leader, a guide to his tribe, and was to give them information, that like the first rays of light would be very circumscribed in quantity, but would gradually increase and spread with effulgence over all the tribes in coming time. He was to the Great Spirit as twilight to daylight, in fact a "*Medicine Man*." He had fasted a long period, I did not find out how long. He was extremely modest, and said but little of what he could do, but from the half-breeds I learnt that he had accomplished a greater feat than the Davenport brothers of a few years ago, though similar in kind. He might be tied up with cords in any way, and then rolled up in a thirty fathom net, placed in the medicine tent alone and closely concealed; in a short time cords, net, and all would be thrown out without a knot untied, and he would appear in a state of profuse perspiration. During the time he was in the tent, it was surrounded by the Indians at a little distance, who kept up a great tumult, beating sticks, kettles, anything to make a noise, for by that means they induced the spirits to come to the aid of the medicine man; others say, to keep the evil spirits off while the good spirits got him disentangled. This is a feat that, from the testimony of the half breeds, several medicine men have performed, but it is never done when strangers to the tribes are present, unless once long

ago, when, as report says, a famous magician performed the feat at the urgent request of some of the Hudson's Bay Company's mag-nates, and on being very closely pressed as to an explanation of how he succeeded, at last said, that "by supernatural aid he changed himself into a snake, and of course crawled out without having to undo the knots." This being done, he changed himself back again to a man, but it took a great effort which was why he was in such a profuse perspiration. Comment on this is unnecessary.

I found old Caugh-ske-kaw-bunk a very decent and reliable man, and we were on such good terms, that on learning that I had no relative in that territory, he offered to be my foster father. On speaking in commendation of him to one who had been long acquainted with him, and with whom he was friendly, I was told he was an old rascal, and that he had only been deceiving me, trying to get what he could out of me. It is right, however, to speak of a man as you find him, and I found the old man reliable, more so than any other I knew.

Since the Indians have been mixing with the whites, many of the younger ones are either leaving off the customs of their fore-fathers, or practise them in secret, which latter I believe to be very common. They are very sensitive to ridicule, and knowing that the whites and half-breeds, being Christian, are unbelievers, they are extremely diffident to converse about, or in their presence perform, any religious ceremony.

As to the belief in a hereafter I found their opinions to be very decided. Their spirit-land is an exact counterpart of the present, but is not visible unless to the spirit eye—everything, trees, animals, birds, guns, blankets, canoes, etc. etc., as well as man-kind, that have been, or may be in existence on *terra firma*, have or will have the spirit form *in futuro*. A man appears; at first he is small and gradually attains maturity, he dies and decays, but his spirit form goes to the spirit land. By parity of reasoning, a tree, an animal, any living thing going through the same circle of events, has a similar futurity.

A gun, a blanket, a canoe, in course of time will rot away and disappear from the visible earth, as much so as a man; in fact it dies, which accomplished it appears in the invisible world, similar in every way to what it was previously, but in the spirit form and indestructible; in fact, to be owned and used in the spirit world by the spirit Indian in precisely the same way and for the same purpose as when in this world. Hence the reason why the dead man's implements of the chase are buried with him; it is with some tribes customary to burn the deceased's personal property at his burial, so that he may have the sooner use of them. Others prefer allowing them to decay naturally; as it is supposed

they are not immediately wanted after death, nature having all things wisely arranged.

The world is to the Indian an *imperium in imperio*, the spirit world coexistent with, both in time and place, the present world. Lakes, rivers, and mountains are not born, do not die, do not decay, hence the spirit and the mortal look on the same earth, enjoy the same, and live on the same lakes and mountains. The spirits are always present with us but we cannot perceive them.

When a man dies he journeys for a certain time, thirty to sixty or more days (ideas on this subject being divided) before arriving at the confines of the happy hunting ground.

Here he finds a deep river that must be crossed; he plunges in. If he had been a good man in this world, he finds no difficulty in making the traverse, but if wicked, he comes out on the same side as he went in, and it matters not how often he tries, he always comes out on this wrong side.

For the period of time before he reaches the river, he must depend for sustenance on the friends he has left in this world, and they, every time they eat for a number of weeks after his death, throw a portion into the fire, where being consumed its spirit form goes to nourish the dead man on his journey. If he have no friends, then his pilgrimage is harassing, and he suffers starvation for the time, though he cannot die. He, in fact, passes through the *hell*, or place of punishment, before the abode of bliss is reached.

I have frequently seen Indians, always, before eating a piece of food, throw a morsel into the fire, and so strong is this belief that I have seen the first one of the old men before alluded to, much as he liked the fire-water, or whiskey, and greedy as he was for every drop he could get, throw the portion first poured out into the fire, and as he watched it blaze and wafted away, he was reconciled with the thought that his departed friend was the first to partake of the delicacy. So it is with meat, or bread, or tea; but a very small piece is so disposed of, for the spirit does not require much to support him. Some of the tribes that live on the prairies are in the habit of killing the favourite horse and burying it near the Indian, so that the spirit may be mounted at the commencement of his journey.

A story is related by McLean, in his book, "Twenty-five Years in the Hudson's Bay Company's Service", that the master of one of the posts in British Columbia was a very great friend of the old chief in that locality, and they spent much time in each other's society. The old chief died, and on the first opportunity, the chief's son killed the master of the fort with the laudable intention of providing his father in the spirit world with his old and valued friend, to solace him in his journey, and prevent any break in their intimacy.

It may be well for many of us that the Christian religion is so much less explicit in its teachings of the future state.

The Indians believe in many good and evil spirits, but there is one *Great Spirit*, the supreme chief, that governs and orders the universe, who is omniscient, omnipresent, and the author of all good, with many subordinates who govern districts under him.

A chief in this world, if he be a good and brave man, has a preferred chance for honours in the ethereal kingdom, and over his own nation. As to the evil spirits, I never heard that anyone is supposed to have predominating power. The heaven, or happy hunting ground, is a country having neither heat nor cold, neither hunger, nor thirst, nor pain, nor quarrelling, nor stealing, nor war, nor scarcity of game of any kind.

The spirit Indian, with spirit gun, or spirit bow and arrows, flies like the wind in his chase after the spirit game, through the spirit forest, shoots the spirit moose, which falls over as if killed, and then the Indian, taking what he wants of him, (the choice piece), goes off to the attack of something else.

The spirit moose that was shot, as soon as the Indian disappears, jumps up and is off again the same as if nothing had happened, to again reward some other spirit Indian with his needed recreation and pleasure; hence there can never be any scarcity of game, and the more so since all the moose killed in this world take on the spirit form.

These Indians have a curious superstition regarding the bear; they will not permit a dog to eat any part of its flesh, or touch the bones, and all the waste portions of this animal are thrown into the fire. On inquiry I could not elicit anything more than that if its flesh be used in an unhallowed manner, the subsequent chase of this animal will be unlucky.

In addition to the sport of the chase, the Great Spirit has many ways of recompensing the brave and good Indians when they are all assembled in harmonious council, presided over by the ruler of all things.

Their hell, or place of future punishment is exactly the reverse of the happy abode. There is no game, no pleasure, excessive heat and cold, war, fighting, and above all, a continual starvation by both hunger and thirst not to be avoided, never to be appeased even by a prospect of death.

In addition to this is a species of refined torture; the bad spirits can congregate along the bank of the river which separates them from the abode of the happy, and see the good spirits enjoying themselves in every conceivable way with a bright sun shining, while they are in the dark and frozen with cold, the narrow river alone being the barrier, so that all they have to do is to swim over;

but let them attempt it ever so often and they always come out on the side of misery more chilled and wet than before making the effort, while seeing new comers jump in and land safely on the happy side.

To give the good Indian a sharper relish for the bliss in store for him, he has had to pass the days, before referred to, in journeying through this country for a period after death, which is supposed to be shorter or longer as he has been more or less deserving. When he arrives at the river, he sees its shore crowded with the unhappy spirits vainly attempting its traverse, he makes his attempt, succeeds, and looking back must be overjoyed by his good fortune. He is immediately surrounded by his departed friends, who welcome him to the happy hunting grounds, and convoy him in honour and triumph to a council with the Great Spirit.

He has now arrived in a new land with new customs, and it takes him some time to get used to it. His implements of the chase may not have yet arrived, and he must depend on the bounty of his friends until such time as his own effects come to hand, or, he becomes in accord with his surroundings.

If in the mortal world he had injured anyone in the spirit world, the aggrieved party can command justice, and the new comer may thus be inconvenienced, but there is no punishment for any crime committed outside of his own tribe.

When an Indian dies, his canoe, gun, blanket, and any other thing considered useful, are deposited at his grave, and very often if his own gun or blanket be inferior or absent, a friend will make up the deficiency.

A son will often buy a new gun or blanket, and leave it or them at his father's grave, with food as well, so that his parent shall want for nothing in the new land.

The things at a grave, valuable or not, may remain exposed until decayed, for a theft of this kind was unknown. I was at first surprised that these things remained unmolested, for they are not watched, and the Indians are well aware that there are amongst them those that are not good; but, say they, no matter how bad an Indian may be, or how much inclined to steal, these will be left untouched, for they are sacred to a spirit in the spirit land. Because the thief must die, and even if he succeeded in crossing the river, he was met by the injured spirit in the new land, and incommoded in any way that spirit desired, for it could then get perfect satisfaction out of him.

Such is a brief outline of the ideas picked up among the tribes referred to, that I remained longest with.

I had often been at a loss to understand why the Christian religion was so slowly adopted by them, and so soon abandoned after adoption, for I knew lots of Indians, Christian while in the

settlement, that were pagan as heretofore after they returned to their hunting grounds, and carried out all their old rites. But on better acquaintance, I could perceive that the Christian religion to such minds did not hold out as clearly perceived advantages as the old one.

The Christian heaven is a mythical abode of happiness, the happy hunting ground a delightful home, that the dullest intellect could perceive and would try to attain. It pointed out real rather than imaginary bliss. Their hell is a piece of perfection as a hell to the Indian mind and experience.

Their ideas of medicine, or the cure of the sick, are mixed up with their religious belief in spirits, and I never saw or heard tell of any system in their treatment, other than some rather rude means to exorcise the spirit. Their use of herbs is limited, and their surgical skill is very simple.

A charm is one of their potent remedies.

DISCUSSION.

Sir DUNCAN GIBB expressed his satisfaction at having been the means of inducing his friend, Dr. Read, to contribute a paper to the Institute full of original observation and carefully noted facts concerning the Indian tribes in a part of the country on the confines of the civilised portions of Canada. From his youth upwards, he, the speaker, had been familiar with the Indians who were settled at Caughnawauga, near Montreal, the Lake of Two Mountains, Three Rivers, Quebec, and some other places; he had gone out fishing, shooting, and boating with them; had purchased various articles of manufacture from them as objects of ornament or curiosity, and he could say that in a knowledge of their habits and customs during a period of over twenty-five years, he was not aware of any superstitions of any kind existing among them now; for in the course of generations, since they became Christians, shortly after the visit of Jacques Cartier to the Island of Montreal, in 1534, now nearly three centuries and a half ago, whatever they may have inherited in regard to religious belief from their forefathers, had become wholly eradicated, and they were as good and sensible in their general views of a future state, now at any rate, as any of their neighbours, the French Canadians. The observations of his friend the author, therefore, conclusively showed that Christianity had not as yet reached the Indian tribes on the shores of Lake Winnipeg, else the peculiar beliefs they entertained, so well described by the author, would not be so vivid. He trusted that the Institute would receive further contributions from his friend, who could be safely relied upon for the extreme accuracy of all his statements.

The Director read the following papers :

ROCK INSCRIPTIONS *in* BRAZIL. By J. WHITFIELD.

[With Plate X.]

THE rock inscriptions were visited in August 1865, during an exploring expedition for gold mines in the province of Ceará. Several similar inscriptions are said to exist in the interior of the province of Ceará, as well as in the provinces of Pernambuco and Piauhý, especially in the *Sertões*, that is, in the thinly wooded parts of the interior, but no mention is ever made of their having been seen near the coast.

In the margin and bed only of the river are the rocks inscribed. On the margin they extend in some instances to fifteen or twenty yards. Except in the rainy season the stream is dry. The rock is a silicious schist of excessively hard and flinty texture. The marks have the appearance of having been made with a blunt heavy tool, such as might be made with an almost worn-out mason's hammer. [Plate X.]

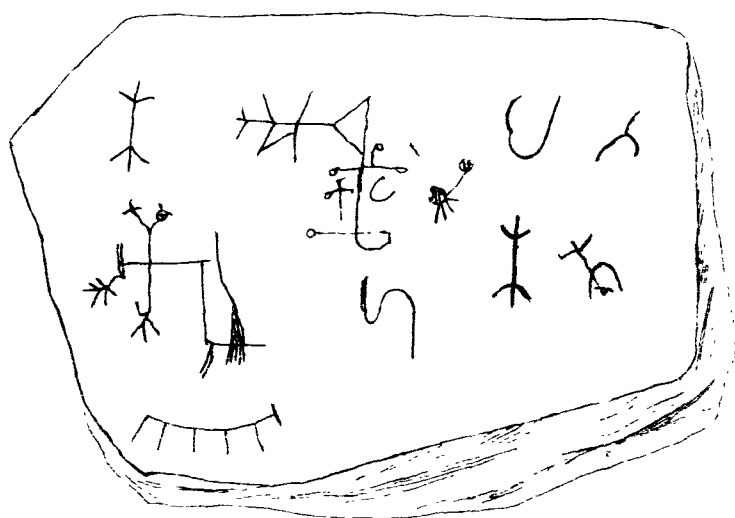
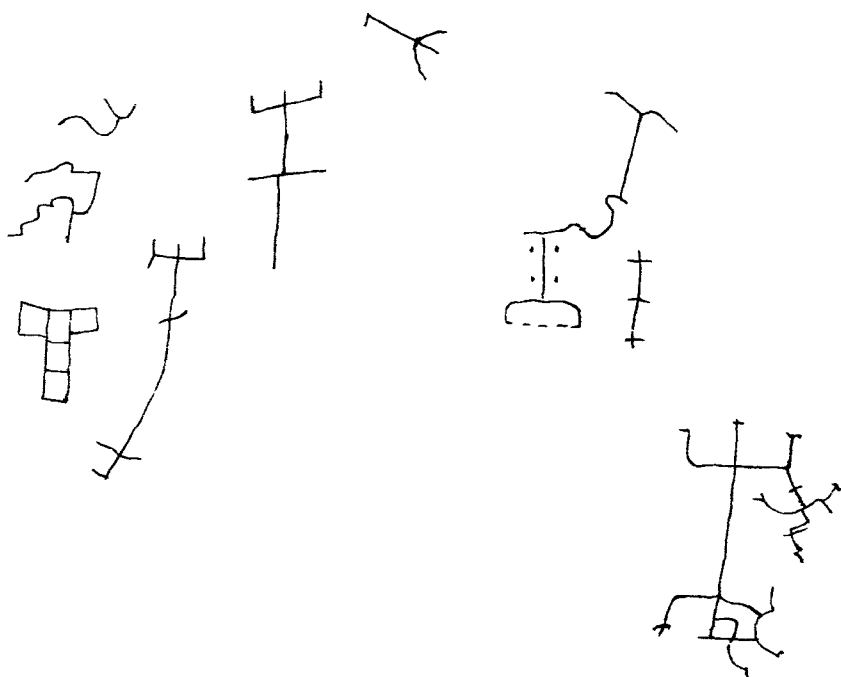
The situation is about midway between Serra Grande or Ibiapaba and Serra Merioca, about seventy miles from the coast, and forty west of the town Sobral. There are not any indications of works of art or other antiquarian remains, nor anything peculiar to the locality. The country is gently undulating, and of the usual character that obtains for hundreds of miles extending along the base of the Serra Ibiapaba.

The native population attribute all the "Letreiros" (inscriptions), as they do everything else of which they have no information, to the Dutch, as records of hidden wealth. The Dutch, however, only occupied the country for a few years, in the early part of the seventeenth century. Along the coast, numerous forts, the works of the Dutch, still remain; but there are no authentic records of their ever having established themselves in the interior of the country, and less probability still of their amusing themselves with inscribing puzzling hieroglyphics, which must have been a work of time, on the rocks of the far interior, for the admiration of wondering Indians.

The finding of these inscriptions in the interior of a country which has been but recently occupied by Europeans—but for ages inhabited by the ancestors of the fast-retreating Indian races of the Mongolian type—leads to the supposition that they are the work of the older inhabitants, the antiquity of which may not be inferior to, or less interesting than, the curious records of Mexico and Peru.

DISCUSSION.

Colonel LANE FOX said, that by a comparison with other rock inscriptions from the same locality, it appeared that the figures repre-



1/2 Nat size.

Arch. Et. 2, 1911, p. 100, fig. 10

sented men and animals, the arms and legs of which were here shown in straight lines. By comparing these with more detailed representations of the same forms, it will be seen that a gradual degeneration has taken place from the more perfect figures in which the outlines of the features may be traced.

The PRESIDENT remarked that it was interesting to find that markings of apparently very similar kind to these Brazilian rock inscriptions, have been met with in the south of Spain on the sides of caverns, but as it would seem not incised, but executed in a red bituminous paint, apparently with the point of the finger. A good account of these curious hieroglyphics will be found in the "*Antigüedades Prehistoricas de Andalucia*" of Don Manuel de Gongora y Martinez. Madrid, 1868.

On the DANISH ASPECT of the LOCAL NOMENCLATURE of CLEVELAND. By the Rev. J. C. ATKINSON.

[ABSTRACT].

It is a noteworthy fact in connection with the ancient history of Cleveland, that a Roman road ran through its easternmost portion, and, beyond question, terminated only on reaching the coast. There is also reason for thinking that a second Roman road, having nearly the same starting point as the other, was directed through the more westerly portion of Cleveland, and with the same apparent destination for the coast or some point near it. It is further remarkable that as at Raven Hill, near Robin Hood's Bay, a Roman fort is known to have existed almost on the very verge of the sea-cliff, so at Rockcliff, near Saltburn, with a sea-view commanding the Tees mouth inlet on the one side, and the coast line beyond Staithes and Runswick on the other, and again at Dunsley overlooking the entire Whitby bay, there are convincing reasons for assuming the existence of works implying permanent Roman occupation. There may be no absolute proof that these works were look-out stations, or that there was any connection between the military roads just named, and the works themselves. But the facts remain, and it is impossible to admit them to our consideration, and avoid the conclusion that the roads and the stations had a mutual interdependence.

But besides these testimonies of Roman connection with, and interest in, ancient Cleveland, there are, or have been until recently, other remains of the same description, and with the same general and marked significance. Thus Dr. Young, in his "*History of Whitby*" (ii, p. 699,) refers to a Roman camp "situated on the brow of the hill beyond Waupley, on the road to Guisborough, fourteen miles from Whitby"; of which he states pre-

cisely that it had measured—for at the time he wrote it was undergoing demolition—"215 feet east and west, by 185 north and south; with a trench near 30 feet over": while besides this, another, some remains of which are still traceable, and which has given a name to the small farmsteads "High Burrows" and "Low Burrows" closely adjacent, was constructed on the line of the more easterly of the two roads mentioned above, and at a point not far from the commencement of the decided slope of the great bank forming the southern side of the Esk valley.

But apart from these remains of Roman connection and interest, which are all evidently or presumptively military in nature and purpose, but very few matters testificatory of Roman occupation in Cleveland have ever been met with. A few coins picked up here and there in the district form nearly the entire treasure-trove of interest to the Archæologist in search of Roman traces. When we couple with this circumstance the historical fact that at the time of the Norman survey no small proportion of a considerable moiety of Cleveland was overspread with forest, morass and bog, a fact which meets with superabundant confirmation from a variety of other facts ascertained, or ascertainable almost to within the present century, and bear in mind that the historical fact in question was such, notwithstanding some five or six centuries of Anglian and Danish occupation, it seems almost impossible not to come to the conclusion that the Roman interest in Cleveland was one mainly, if not exclusively, of a strategical or military description.

But even further than this: from the continuation of the military ways in the direction of the shore, one of them evidently terminating at the shore only, and from the existence of the posts on the very verge of the shore, and in positions commanding such an extensive outlook, the further conclusion can only be that the immediate source or origin of the Roman interest in Cleveland was distinctly external to its confines, and not internal, or connected with any population then occupying the district.

But this is a conclusion which points directly to something more than a possibility that the coasts of Cleveland were, during the period of Roman occupancy, not only open to, but sought in, incursion or attack from the sea; in other words, that expeditions not only presumably, but almost necessarily Teutonic, and having plunder for their object, were no novelty even in the fourth century, and possibly earlier yet. When ships, such as those of the Veneti described by Cæsar, were in existence at so early a date, and again when vessels, such as those discovered in the Nydam and Thorsbjerg moss-finds, were in use, and were sailing, moreover, to ports certainly a long way removed from their own Jutland harbours, there can be no question, quite apart from the

distinct assurances of history, that the coasts of northern Britain offered an inviting field for predatory ventures from the opposite shores, long before such ventures became systematised and directed to a wider and more definite end.

And if so, where is the improbability that attempts at settlement or detached colonization, analogous to those which seem to have resulted in fixed occupation by Teutonic settlers further south, even antecedently to Cæsar's time, may have been made in very early times in a district which presented such convenient means of access from the sea as those afforded at Tees mouth and—to say nothing of lesser intermediate landing places—in the haven presented a few miles further south by Whitby Bay?

All this is certainly mere matter of speculation; and of course it is more conjectural still to what extent any such immigration, or early tentative Teutonic settlement, may have proceeded. It is sufficient at present to suggest the possibility of such efforts, and to direct attention to the fact that there are circumstances which seem not only to indicate such possibility, but, even of themselves, to introduce a distinct image of it to the imagination.

But whatever may have been the date of the earliest Teutonic settlements in north Yorkshire, it is further a question admitting of no little in the way of conjecture or speculation, to what extent the face of the Cleveland country was actually taken up by the inflowing tide of invaders and settlers in the fifth and sixth centuries. There is no doubt that, at a much later period, in several of what are now the richest and most inviting districts in North England, as also most important in both civil and ecclesiastical relations, large tracts were, at a period very much subsequent to the date assigned for the accomplishment of the English conquest, still quite unappropriated, or at the least open to the colonising proceedings of some straying community in want of a homestead. And it may well have been that in such a district as much of Cleveland must have been at the early period referred to, many and considerable tracts which were two or three centuries later allotted, more or less cleared, and made the sites of active occupation and permanent abode, were, from the nature of the case, allowed, nay even necessitated, to remain at least unimproved, if not also unappropriated. In other words, the natural clearings in such a forest-grown country, as this district undoubtedly was, would naturally or of necessity be preferred to spaces which required great and continuous labour before they could become available for settlement.

There is no deficiency of such tangible evidence of the presence and influence of the Danes in Old Cleveland, as is left impressed upon the language and nomenclature of the district, and hardly less strikingly apparent in the personal names, not only of the

ancient owners, but also of later dwellers in its vills and hamlets. Thus the Domesday list of owners, besides the English names Aldred, Edmund, Uctred, the Celtic names Magbanec, Gospatric, and the apparently French name Lieuenot, includes the following, unquestionably those of Northmen, all of them :—

Altor	Norman
Alver (Alfr)	Orm, Orme
Archil, Archel	Walteof
Aschel	Siuuard
Carl	Suuen
Gamel	Tor
Hauuard	Torchel
Leising, Lesing	Turorne (Thorarinn)
Ligulf	Ulf
Malgrim	Ulchel

Then the names of places yet extant, or extant in mediæval times, give up the following list :—

Alfgerdr	Hrosskell
Arnodr	Ingialld (three of the name)
Asulfr	Ivar
Basi or Besi	Kole, Kolli, or Kollr
Baldr	Ketell
Bergulfr	Leifr
Bjarnvardr	Mul or Muli
Björn	Norman
Bolli	Orm
Buthar	Steinn
Dane	Sveinn
Esi, Esa, or Asi	Thorvalldr
Gautr	Toli
Grimr	Uggr
Grimkell	Uglebard
Gunnar	Vesteinn

To these may be added the following very imperfect list annexed, compiled from ancient documents, Parish Registers, and still existing personal nomenclature :—

Asi (Ace, Aza, Azø, Asza). W. R.*	Farman. W. R.
Ani	Gamel. W. R.
Askell	Gill
Arkell	Goda. W. R.
Arngrim. W. R.	Grimkell
Arnegrimssune. W. R.	Havelok
Avalldr	Herwalld. W. R.
Audun	Horn
Bardr (Bardh, Barde, Bardth). W. R.	Keld
Bardulf	Lax
Blacher, Blaker. W. R.	Leisingr. W. R.
Brandr	Litster
Brogi (Brok. Brock). W. R.	Orm. W. R.
Brun, Bruni. W. R.	Osbjörn. W. R.
Dane. W. R.	Osgod. W. R.
Faganulf. W. R.	Othun, Outhan, Outhen. W. R.

* “Whitby Register or Abbot's Book.”

Outhengar. W. R.
 Raghanald. W. R.
 Ragnar. W. R.
 Rafnkel. W. R.
 Ranulf. W. R.
 Ramkell. W. R.
 Raa or Ra
 Rawland
 Ribald
 Richer
 Rigg
 Rowntree
 Scarth

Sigurth. W. R.
 Svartkollr. W. R.
 Sveinn. W. R.
 Sveinbjörn
 Teitr
 Thordis
 Thorfinar. W. R.
 Thorgils. W. R.
 Thorkell. W. R.
 Thorketell. W. R.
 Tosti
 Ugle

There is also another class of names of marked character prevailing greatly in the district, which ought not to be passed over quite without note, particularly as not a few of them are of a singularly characteristic description; I mean the names with the termination *son*. The entire list would be too long for insertion, but the following are, among others, very suggestive:—

Allason, Allison, Allatson (O. Dan.	Jordison (O. D. Hjörtr, or Jord. Cf.
Ali or Atli)	Jardarsonr, a synonym of Thor)
Anderson (Dan. Anders)	Lockson (O. D. Loki or Loke)
Annyson (O. D. Ani)	Peirson (O. D. and D. Per, Person)
Colson (O. D. Koli, Kollr)	Towilson (O. D. Toli)
Collison (O. D. Kolli)	

The evidence afforded by the names of places in ancient times as preserved in Domesday, and in writings of more mediæval date, and their comparison with those of later date, seems to show that all the names ending in *um* are clearly datives plural, and about the most of them there can be as little doubt as about the names of places in *um*, found in almost every page of *Landnámabók*.

Arusum, like Upsala, is a name found on the other side of the North Sea; and about Lithum (O.N. *hlith*, a slope, mountain side), which, with its compounds, occurs three different times, it is quite worth notice that that district of Cleveland in which these names occur is still, by those who live at the higher level of the Dales lying to the south of it, spoken of customarily as “the low *side*.” With such instances as these to guide us, and with the confirmation of the prevalent nomenclature of the district, we need not hesitate about attributing Morhusum, Locthusum, Cotum, Toscotum, etc., to a Danish, rather than to an English origin. Yarm, in its old form, or as Jarum, bears a singular resemblance to a place-name in S. Jutland, the phonetic form of which is also written Jarum, the true form being Hjar-dum, contracted from O.W. Hjardaheimr. Aclum, Laclum or Lelum, Ergum, and Thackrum are doubtful, and it is possible two of the four originally involve the ending *holm*.

We find Domesday Upesale, Upeshale, now Upsal; Wercesel,

Wercheshala, now Worsall; Ghinipe, now Hawsker; Breche, Brecca (supposed by Young to be Bracken-ridge, near Whitby—but compare Brekka, Fagrabrekka, that is, Fair-slope, both local names in Landnámabók; Semer, Semers, now Seamer; Merse, Mersche, now Marske; Mediæval Tranelholm (Trenholm,) Simundholm, Sletholme, Smetheholme (not to mention more modern names involving the same suffix, to the number of forty and upwards); Carling-houe, Glaphoue, Potto, Sexhow, Stanghow, Tidkinhoue, Walpelhoue (now Waupley), and many others; Renneswyc, Reneswyk, Runeswik (now Runswick), Katewik, Saltwyk or Saltwik, Westwyk, Blawyc; Hellewath, Whawath, Sandwath, Sinawath; Gunregate or Gunnergate, Lardegate or Laddegate, Lundegate; Burstadgile, Buscogill, Ragill, Saltergill, and many others; Slechetes, Slectes, Seleythys, Slehtes, now Sleights; Tiviresik, Storthesike, Totesick, Fowlesike, Luschel-desik, Brakedalsic, with the more modern Holesike and Howlsyke; Halmerige or Schalmeryg, Leaserigg, Rethrig, Cockrig, Brockrigg and others; Kerling-keld, Helewaldesceld, Houtekeld, Dunsildceld, etc.; Tranmire, Waw-mires, Punder-mires, etc. etc.; which all go to swell the same long list.

On the whole, then, we find fifty names in *bi*, thirteen in *thorp*, twelve in *thwaite*, thirty-one in *dale*, fourteen in *um*, seven in *grif*, eight in *clif* or *clive*, three in *borg* or *burg*, besides about fifty-five not specially classed, of which hardly one in fifty admits of any doubt, from the early date of their occurrence, of their essentially northern origin; while it will be well to bear in mind that there is further a very large number of names belonging to the classes in *dale* and *clif*, and to the groups in *rigg*, *sike*, *holm*, *keld*, *sty*, *wyke*, *wath*, etc., which are only not brought into the enumeration because documentary proof of their imposition previously to mediæval times chances to be lacking.

REMARKS *about the* CONSECRATION *of the* SERPENT *as an* EMBLEM
but not an OBJECT *of* WORSHIP *among the intelligent* DRUIDS.
By JAMES HUTCHINGS.

[ABSTRACT.]

THE author pointed out the growing interest in ancient history, tradition and archæology, and the necessity of intelligent investigation of all subjects of this nature. That it is an error to speak of the serpent in systems of worship without taking into con-

sideration its relative and antecedent signification. Hence mere symbols had been mistaken for the things signified, and objective emblems had been assumed as the manifestation of general fetichism. That the Rev. J. B. Deane's work on "The Worship of the Serpent" was, notwithstanding its great learning, founded on a series of assumptions and foregone conclusions, and therefore much beside the mark, in the true meaning of the serpent in the forms of ancient worship and pantheistic systems of past ages. That the same logic applied to the symbols or emblems of Christianity, the cross and crucifix, would be intolerable; and equally so to suppose that the relation in Genesis about the serpent tempting Eve, as the origin of the emblem of the serpent in all the forms of religious worship in all ages and nations. That the serpent was an emblem of the life giving and healing influence of the infinitive spirit of the universe; and, if it had not been so, Aaron and Moses committed a grave mistake in using it as the means of curing the children of Israel. As an objective god, their doing so was the direct way to confirm the Jews in their tendency to fetichism; and that in no proper sense can the idea of Satan be made to underlie the scriptural or any other relation of facts touching the serpent. That all intelligent druids recognised it as a consecrated sign of the infinite all-pervading Spirit. That the construction of all druid temples in Britain, Gaul, and Germany, were in their essential characteristics the same as those of Greece, Egypt, and Asia, in which the serpent was recognised as a symbol only, not as an objective god. That the druids were the same as the sophi amongst the Greeks, the magi amongst the Persians, the gymnosophists amongst the Indians, and the Chaldeans amongst the Assyrians, and that a correct meaning of all the chief terms and objects and ceremonies had a reference to the solar orb and its relative position in the heavens, its daily rising in the east being one of the most striking and significant. Hence all temples from the present to the most remote periods, have their most holy place at the east end. In relation to the druid temple of Abury, it was pointed out that while Stukeley derived from "Hakpen", a compound word of Hak, a snake, and pen, the head, Mr. Deane contended that hags and hagworms are names for snakes in Yorkshire to this day; but on the authority of Bailey, it was shown that hags also meant "fiery meteors", and pen, "the top of a mountain"; hence it was not unwarranted that the name was given from its consecration to the fiery orb of day. This was all the more striking from the fact that Stukeley, Hoare, and Deane all agree that the meaning of Silbury Hill, is "Hill of the Sun." The druids were in reality northern magi of the solar divinity whose

eastern temples are still the wonder of the world, and that those who worshipped in them looked beyond the emblem of the serpent, beyond the solar orb, to the common Father of the universe, who dwells not in temples made with hands.

The meeting then separated.

ANTHROPOLOGICAL MISCELLANEA.

What am I? A popular Introduction to the Study of Psychology.
By EDWARD WILLIAM COX, Serjeant-at-Law. Vol. I. *The Mechanism of Man.* London: Longman and Co. 1873.

MEMBERS of the legal profession do not very frequently favour us with treatises bearing on subjects connected with anthropology or psychology; and yet lawyers have, of all persons, the fullest opportunity of obtaining an acquaintance with human nature in all its various phases, more especially as regards the exhibition of mental and moral characteristics. To the medical practitioner, the material man more immediately presents himself for observation. Nevertheless, medical men have been far more prolific than lawyers in the production of works relating to mental science. We rejoice, therefore, to see the subject before us taken up by a writer who has the means of regarding it from a new point of view, and whose opportunities of observing human nature in some of its most striking aspects, such as the varied exhibitions in the law-courts, both civil and criminal, constantly present, have been both extensive and diversified.

It has for some time been a reflection on societies devoted to the study of anthropology, not only in this country but on the Continent, and in America also, that material man too much engrosses their attention, to the exclusion of that which is mental, and which necessarily constitutes the higher branch of the system. The facts, however, which the study of material man furnishes, do much to supply matter for the advantageous and sound investigation of mental topics; and, in the case of the Anthropological Institute of Great Britain and Ireland, the recent establishment of a department expressly devoted to the study of psychology ought, at any rate, to exonerate it from this censure.

Mr. Cox, in the preface to his work, remarks that "the nineteenth century sees us but little better acquainted, *scientifically*, than we were in the ninth century, with mind and soul, their structure, functions, and capacities, and their relationship to the body, to each other, and to the world in which they exist," p. vii. The "gathering together of facts", and "trying them by experiments", he points out as the remedy for this state of things. Phrenology he considers, and perhaps rightly, gave the first great impulse to psychological inquiry, by transferring the study of mind from metaphysics to physics. But surely, independent of phrenology, the course here so judiciously recommended may be, and has been, pursued.

The subject of the present work is divided into two parts. The first part, comprising vol. i, is devoted to a description of the human mechanism—body, mind, soul—merely as it is constructed. The second part is devoted to a description of the *machinery in action*, embracing all the phenomena of intellectual existence, as distinguished from purely organic life. There is of course, and almost necessarily, much in this work that is purely speculative, and much also, which is doubtless more valuable, that is highly suggestive. In this respect, the writer may be acting as a pioneer to those who shall follow him in his researches, and may point the way to future investigation and future discoveries in the science.

In chapter iv, "How we grow," Mr. Cox ventures, "with all deference to the scientific world," on a suggestion "that the body is constructed by the nerve-system; that the nerves attract to themselves those particles contained in the blood that are fitted for the particular structure to which each nerve belongs; that this formative influence extends to a certain distance from the nerve by varying lines of force; and thus it is that all the various shapes of limb and organ are modelled," vol. i, p. 23. Analogous instances, he remarks, occur even in inanimate nature. A "formative influence", of this sort, we may observe, was attributed by some writers of the sixteenth century to the soul itself. "The germ" he suggests to be "a miniature nerve-system, so infinitely small as to be beyond the penetration of our most powerful microscopes"; and he concludes that "a man is really a nerve-system clothed in flesh, and not, as we are accustomed to think of him, a structure of bones and flesh permeated by nerves, and shaped by some external formative force whose source and action are equally unknown to us," pp. 23, 24.

As to the inquiry originated in chapter v, "How we live," as to "what is the force that sets the machine in action and keeps it moving," Mr. Cox replies by terming it "vital force, because it appears to begin and end with the life of the body—if, indeed, it be not the life itself," p. 38. This vital force (as has by other writers been supposed with regard to life itself), he suggests, may be allied to magnetism or electricity. This vital force, he tells us, "has its seat in the nerve-centres, and flows from them, permeating the whole body, and conveyed by the nerve-system," p. 43. He also states that "the intelligence at the centre receives its information of impressions made by the world without through special faculties called the senses," *ib.*

Mr. Cox acknowledges himself unable to suggest a solution of the mystery "what life is"—a mystery which Coleridge endeavoured, though very unsuccessfully, to unfold, but of which he thought that John Hunter had a perception, although he wanted terms in which to express his meaning.

Chapter viii, "On the Germ," contains the following remarkable, novel, and original suggestion, which we give in the author's own words, and must leave it to each reader to form his own opinion as to its truth and its value. After assuming that every individual life has its origin in a germ, and that two parents are necessary to the vivification and expansion of that germ, he proceeds as follows:

"The suggestion which I venture to throw out for the consideration of physiologists is, that instead of being constructed of one germ, proceeding from one parent only, and either nursed or vivified by the other parent, (as has hitherto been universally assumed), we are really constituted by the *union of two germs*, a germ being provided by each parent. I further suggest that this duplex origin is the cause of that duplex character of the structure, which surprises the anatomist and puzzles the physiologist" (pp. 67, 68).

He further remarks on this head, and in support of his hypothesis :

"The human structure is not one whole, but two parts joined together. One of the parts rarely, if ever, precisely resembles the other part, and often there is a marked unlikeness. Seldom are both sides of the face alike, as a very slight observation of the reader's friends will assure him. One side of the body rarely, if ever, resembles in shape the other side of it ; one side is usually weaker than the other, or more liable to injury, or habitually less healthy. The external organs are all obviously duplex. We have two arms, legs, eyes, ears, nostrils. We have also two brains and duplicate ganglia. Throughout the structure there is the manifest junction of two distinct formations, and the point of junction is for the most part plainly visible. . . . Such a structure seems to be inexplicable on any theory of the development of a single germ" (p. 68).

We do not pretend now to express any opinion upon this singular and ingenious hypothesis, which may, at any rate, afford a theme for fruitful discussion before some scientific body. If this duplex germ is the product of the two parents, is one part of it to be supposed to belong to or to originate from one parent, the other part from the other? And is it to be inferred that the leading characteristics of the male are exhibited by the organs, more particularly the limbs, on the right side of the body, which display more force and energy than those on the left ; while those on the left are characteristic of the female sex? But there are many animals which do not possess this duplex organisation, and some of them possess it only in part. Plants, too, in which sex is existent, are destitute of it. Mr. Cox, however, "suspects" that "this suggestion of a double germ by the union of two distinct germs, each parent providing one, will be found on examination to be equally applicable to vegetable life, and equally capable of solution of the problems of vegetable as of animal physiology" (p. 79).

Those who are desirous of following up this interesting though very perplexing subject, we must refer to Mr. Cox's book, where it is discussed at length ; and the admitted difficulties in the way of this novel hypothesis are dealt with ably and ingeniously, if not altogether satisfactorily.

A good many physical as well as psychological topics are discussed in the work before us, but principally those which bear upon the former. For instance, disease and death, their causes and their nature, are treated at length in chapter ix, "How we die," which concludes with an enquiry into the nature and essence of intelligence.

An interesting topic, well suited for discussion before a scientific body, and where facts might be adduced tending to its elucidation, is started at p. 117, as to whether the same senses convey the same impressions to all people alike. An examination of animal nature will probably conduce to aid the settlement of the question. A difference in texture and temperament must also necessarily occasion a difference in the material organs of sensation. The instance of the noise made by the discharge of a gun (p. 117), is perhaps not altogether a satisfactory one to decide the fact. In the case of musical sounds, the relative possession of taste and feeling must contribute much to vary the effect, if not the nature of the impressions in different persons. In the chapter on hearing, Mr. Cox remarks that it is not merely possible but probable, that different animals may have different perceptions of sound; may hear sounds that are inaudible to us, and may be deaf to sounds we hear" (p. 124).

Chap. xvii is devoted to a discussion of the nature of "Life," in which is considered the universality of life, which our author deems to be "merely a condition of matter when combined in a special manner, which we term organic" (p. 141). Life he observes, or rather argues, "does not quit the body, it merely ceases." (p. 143).

Several other topics are embraced in this work, which are of interest alike to the physiologist, the psychologist, and the anthropologist. The principles of the materialists are examined into, and are handled with some severity. Phrenology is also discussed; and our author appears to entertain a very high idea of it as a complete mental system (p. 167). In fact, there are very few subjects of the nature alluded to, that are not here touched upon, and we only regret that the limited amount of space allowed to the examination of works of this description, utterly precludes us from more extensively following the author through the wide range which he has pursued.

It is of course very difficult to pronounce a critical judgment upon a book of this description, devoted almost entirely to the discussion of speculative topics, respecting which no certain conclusions can be even hoped for, and concerning which, perhaps, each reader will differ from the other, and that in every possible way. Suggestion is probably the utmost that the writer can accomplish while handling these very perplexing themes; and in judiciously effecting this consists the real value of such an undertaking. The work before us, though in parts it is obviously somewhat hastily written—and a life would not be too much to devote to a book on these great subjects, and which embraces so many of them—is, nevertheless, doubtless one of considerable value of its order. It displays deep philosophic thought, much ingenuity, and thorough independence, candour, and moral courage in conducting the enquiries instituted.

ON THE PROBABLE EXISTENCE OF MAN DURING THE
MIOCENE PERIOD.

Constantinople : March 12th, 1873.

DEAR SIR JOHN LUBBOCK,—Enclosed is the copy of a paper which my brother, Mr. Frank Calvert, has sent up for insertion in the "*Levant Herald*," requesting me, at the same time, to forward you a copy of the number in which it appears.

This I shall do ; but since it cannot appear in time for this mail, I have thought it as well, meanwhile, to let you have the paper in MS., in case you should like to give it publicity at home yourself.

You will observe that the announcement it contains is of very great scientific interest.

Very truly yours,

EDMUND CALVERT.

Sir John Lubbock, Bart.

[COPY].

I HAVE had the good fortune to discover, in the vicinity of the Dardanelles, conclusive proofs of the existence of man during the Miocene period of the tertiary age. From the face of a cliff composed of strata of that period, at a geological depth of eight hundred feet, I have myself extracted a fragment of the joint of a bone of either a *dinotherium* or a *mastodon*, on the convex side of which is deeply incised the unmistakeable figure of a horned quadruped, with arched neck, lozenge-shaped chest, long body, straight fore-legs, and broad feet. There are also traces of seven or eight other figures which, together with the hind quarters of the first, are nearly obliterated. The whole design encircles the exterior portion of the fragment, which measures nine inches in diameter and five in thickness. I have also found in different parts of the same cliff, not far from the site of the engraved bone, a flint flake and some bones of animals, fractured longitudinally, obviously by the hand of man for the purpose of extracting the marrow, according to the practice of all primitive races.

There can be no doubt as to the geological character of the formation from which I disinterred these interesting relics. The well-known writer on the geology of Asia Minor, M. de Tchibatcheff, who visited this region, determined it to be of the miocene period ; and the fact is further confirmed by the fossil bones, teeth, and shells of the epoch found there. I sent drawings of some of these fossils to Sir John Lubbock, who obligingly informs me that having submitted them to Messrs. G. Busk and Jeffreys, those eminent authorities have identified amongst them the remains of *dinotherium*, and the shell of a species of *melania*, both of which strictly appertain to the miocene epoch.

In addition to these discoveries, and at about ten miles distance from the above locality, I have lately come upon other traces of

man's existence in drift two or three hundred feet thick, underlying four or five hundred feet of stratified rocks. I cannot positively affirm that this formation is likewise miocene, the fossil shells it contains not having yet been examined scientifically; but in all probability such will prove to be the case. Throughout this drift, I have found numerous stone implements, much worn. Flint is comparatively rare, but other hard stones have been adopted, jasper, of red and other colours, being predominant. Some of the implements are of large size, and weigh upwards of nine pounds.

It is not more than forty or fifty years since the possibility of man's having come into being at an earlier period than the received term of six thousand years was first discussed; and it is only quite recently that geologists, upon the evidence furnished by the quaternary drift, are agreed to assign him an antiquity of about one hundred thousand years. Some suspected traces of his existence have indeed been noticed in the pliocene and miocene formations, but not sufficiently marked to be conclusive.

On this subject, Sir John Lubbock, in his "Prehistoric Times", says, "whether we have conclusive evidence of the existence of man in miocene times is a question on which archaeologists are still of different opinions. Sir Charles Lyell himself thinks that we may expect to find the remains of man in the pliocene strata, but there he draws the line, and says that in miocene times, 'had some other rational being representing man, then flourished, some signs of his existence could hardly have escaped unnoticed.' . . . It seems to me evident that the argument derived from the absence of human remains, whatever may be its value, is as applicable to pliocene as to miocene times. . . . The imperfection of the geological record has hitherto been urged upon us almost as strongly by Sir C. Lyell as by Dr. Darwin. It is true that few of our existing species, or even genera, have as yet been found in miocene strata; but if man constitutes a separate family of mammalia, as he does in the opinion of the highest authorities, then, according to all palæontological analogies, he must have had representatives in miocene times. We need not, however, expect to find the proofs in Europe; our nearest relatives in the animal kingdom are confined to hot, almost to tropical climates, and it is in such countries that we are most likely to find the earliest traces of the human race."

M. Louis Figuier, in his "Primitive Man", observes, "Some geologists have supposed that traces of the presence of man in the tertiary formations (miocene and pliocene) have been found. But this is an opinion to which we cannot assent. . . . It is in the formations belonging to the quaternary age, that convincing and incontestable evidence of the existence of man is to be found. The date of the first appearance of mankind on the earth, must therefore be restricted to the quaternary period prior to the contemporary geological era."

The discovery which I have been so fortunate as to make, now sets this question at rest. It may be mentioned for the information

of the general reader, that the drift of the quaternary age to which the known vestiges of primitive man have been hitherto confined, forms on the earth's surface as it were a mere superficial crust; but below it, underlie in succession the vast thicknesses of the new and old pliocene and miocene of the tertiary age, to which last my discovery now carries back the existence of mankind.

The remarkable fact is thus established beyond a question, that the antiquity of man is no longer to be reckoned by thousands, but by millions of years.

I shall abstain from making further researches in the place where the engraved bone was discovered, until I can do so in the presence of persons well-known to the scientific world, who, I trust, may be tempted to visit the spot.

(Signed)

FRANK CALVEIT.

Dardanelles, 8th March, 1873.

The Ainos and Japanese. By HERR VON BRANDT, Consul General of the German Empire for Japan.*

JAPANESE sources give little or no information as to the aborigines of the country. Whilst some see in the present inhabitants the descendants of the aborigines, whereby, indeed, they do not solve the riddle of the contemporaneous appearance of the Ainos on the Japanese islands, others derive the population of the country from Chinese immigrants, and go so far as to place back the first colonisation of Japan in the year 2697 B.C. It is the old story of the physician, who received from a tyrannical emperor the command to search for the tree of everlasting life, and who made use of the opportunity to withdraw himself from the power of his master. He demanded fifty young men and fifty maidens as an escort, and with these he founded the first colony in Japan. All the later Japanese authors incline to the supposition that the country was inhabited by an original race, who were in the lowest stage of culture, and with whom a trace of political government is met with only so far as those who, distinguished by peculiar bodily strength or mental capacity were considered during their lives as superior beings, after their deaths came to be revered as gods. The most important of these chieftains was *Djin-mu*, who afterwards became the first Japanese ruler.

That nothing useful can be constructed out of such materials is evident. We may consider that the old Kœmpfer has come the nearest to the truth. In his "*Amœnitates Exoticæ*," he speaks of immigrants from Tartary, who were said to have lived a long while dispersed in the country: "*Diu latuerunt obscuro nomine e Dalz seu Tartaria hospites in Japonia*," until finally, contemporaneously with the foundation of the Roman Empire, the Japanese Empire was established under the first Mikado.

* Translated from the "*Verhandlungen*" of the Berlin Society for Anthropology, Ethnology, and Archaeology. October 1871 to November 1872.

As to my own opinion, it is that not only the Japanese islands, but also a part of China and the Corea, were inhabited by one and the same race—the Ainos (who were called by the Japanese in historical times *Yelis* or eastern barbarians), and that at a later period these were pressed back by advancing peoples of another race to the north and east, so that at the present day they are found only in a small number on the islands of Yeso and Saghalien and the Kuriles. In favour of this originally greater expansion of the Ainos, is a report of the Baron von Richthofen, read in April 1870, before the Geographical Society of Berlin, according to which, Herr von Richthofen, on his visits to Kaoli-Mon, the Chinese-Korean trading-place on the border of the two kingdoms, has observed among the Koreans two distinct types, one that of the officials and merchants, with a rather long head, the other an inferior one, reminding us of the savages of North America and the Ainos, with a broad head. On my visit to Tsau-liang-hai (Fusong) in South Corea, in the year 1870, no such typical difference struck me; the Koreaners, whom I there saw, belonged wholly to a single class of the population, and had fine vigorous forms with long heads, and would therefore be counted among the first of the before-mentioned types.

The first historical notices which we have respecting the inhabitants of Japan go back to the year 660 before Christ, and give an account of the conflicts through which Djim-mu, the first Mikado, raised himself to the position of chief ruler of the land. What appears to be certain is that these conflicts did not take place between later immigrants and the aborigines, but between different people of the same race, which already some hundreds of years earlier had immigrated into Japan, and driven the aborigines back into the middle of the island Nippon. Everything speaks for this supposition, but particularly the fact that Djim-mu's final triumph was obtained, not by force of arms, but by peaceful treaty, in which the conqueror acknowledged the equal divine origin of the conquered and secured to them and their descendants great honours; such an agreement could be concluded only among peoples of the same race. Whence these immigrants originated can be finally settled only by comparative philology; but many things already indicate that their original home must be sought in inner Asia, perhaps near the cradle of the Aryan stock. The Japanese authorities, as usual, leave us in the dark; individual writers, indeed, speak of a connection of Djim-mu with the ruling-house of the Liu-kiu Islands, and in Europe also the opinion of a peopling of the Japanese islands from the south has been repeatedly stated, but it appears more than improbable that such an intercourse should have taken place between Japan and Liu-kiu, since the first mention in the Japanese annals of intercourse with Liu-kiu occurs about thirteen hundred years later.

Much in the old rites and customs connected with the religion of Japan indicates that these first immigrants had been of Asiatic, perhaps of Aryan origin. The old religion of Japan, the *Shinto* or *Kami* cult, was originally a fire and star worship, out of which by degrees

has been developed a worship of gods and heroes. The Japanese, like most other peoples, have found it more convenient in their progressive development to divide the divine original power (*urkraft*)—in this case the light, the sun—into its individual parts, and for each of its attributes to institute a particular saint as intercessor (*fürbitter*). In time the number of these intercessors, partly mythical persons, partly men canonised by the Mikado, increased to an infinite number ; but the ancient cult, with its rites and requirements, the pollution by contact with sick and dead people, the necessity for purification by fire and water, and sometimes also by salt, before prayer or entering the temples, the use of drink offerings before the images of the saints prior to taking meals, the annual purification of the temple utensils and buildings with hot water, the occurrence of the masculine and feminine principles, which at first united afterwards appear separated, and symbolically are represented in Japan by a staff and a strip of paper, as elsewhere by the sword and dragon, the staff and lozenge, &c., all these indicate a fundamental connection of the Sinto cult with the ancient Chinese religion, with the worship of genii, and the state religion ruling now even in the Corea, which is said to be likewise a worship of spirits derived from a pure nature worship. As regards funeral ceremonies the likeness between China and Japan is undeniable. The custom of burying with dead generals their servants, horses, &c. continued even to the time of Confucius. At a later period, in the place of these living beings and of objects destined for real use, were substituted paper pictures which represent carts, horses, boats, clothes, money, etc., and which have to serve the dead on his journey into the other world. This custom has continued to the present day. All over Japan we find the same custom. Up to the year 5 before Christ, all the servants and furniture of the emperor and high personages were placed in the grave with them on their burial, and when the Mikado Sui-Niu in that year abolished this custom, because he could not bear to hear the lamentations of the men who were buried alive, in the following year the placing of earthen figures in the grave was on the burial of his wife substituted for it. So firmly, however, was the old custom rooted, that still for above fifteen hundred years men of the soldier class considered it a point of honour to commit suicide on the graves of their chiefs, or to mutilate themselves by cutting off some of their limbs, and the Tycoon Iyeyasu even in the year 1600 after Christ was, on the publication of the so called Hundred Laws, obliged to forbid this habit under threats of the severest punishment.

The use and signification of the red colour appears also to indicate a connection between the east and the west. While the rulers of the west wear red garments as marks of their dignity, and claim that colour for themselves, the Emperor of China writes his edicts with the red pencil, that is, with red colour, and the coffins of the deceased Mikados were covered with red, that is, with cinnabar. The form and the choice of the place of the tombs of the rulers appear also to show a connection ; these are always situated on the slopes of hills, and often surrounded by a mound and ditch like a fortification.

I am sorry that little information can to the present time be derived from the ornamental objects and weapons found in the graves, which appear to belong to a later period. As for the weapons, these are of stone, arrow heads, chisels, knives, hammers, quite in the form and workmanship of the present time; but stone arrow-heads are still made use of in Northern Japan, and I have even in Yezo seen stone hammers and hatchets among the Ainos. The ornaments, the *kudatama* and *magatama*, indicate a period of already more highly developed culture. The latter, worked out of stone, crystal, etc., appear to be imitations of animal teeth, and have perhaps at a later period taken the place of real teeth; the former, somewhat elongated little tubes, perforated in the long axis, usually very well worked, and formed of glazed clay, were together with the *magatama* worn as necklaces, and date from a more recent period.

In order once more to concentrate in a few words my views as to the origin of the present inhabitants, the Japanese islands appear to me to have been inhabited first by the Ainos, the aborigines or very early immigrants; later, but still in prehistoric times (using this phrase in relation to *our* historical knowledge), other immigrants from the Asiatic continent pressed forward, and drove back the Ainos to the north and east. Like all Asiatic peoples, the invaders fixed their chief town, Miako, in the border territory, in the province Yamato, the cradle of the ruling family. Quarrels broke out among the conquerors, which after many conflicts, terminated in the re-establishment of the sole sovereignty of the Mikado. Afterwards, according to history, first in the year 32 B.C., immigrants came from the Korea and China, and from these three elements, the Ainos as the first immigrants, and the later Chinese and Japanese immigrants, has the Japanese nation, as we know it, been formed. Probably the type of the first immigrants has been preserved the purest in the ruling family and in the families of the highest class (*Kuge*), at least their complexion is usually whiter than that of the other Japanese, and the form of the head and the lineaments of the face are superior. Traces of admixture with the Ainos are observable, especially in the north of the island of Nippon, where they have maintained themselves the longest, and where, therefore, contact with them has been the most frequent.

The Ainos have not abandoned the field to the new comers without severe conflicts. According to Japanese authorities, the *Yebis*, as they were called, in the year 110 A.D., still dwelt in Suruga, south of the 35th degree; in the seventh century they were in the almost exclusive possession of the country north of the 38th degree, and even after the pretended submission of the whole of the island Nippon to the chief authority of the Mikado in the ninth century, the annals still relate continual rebellions and invasions of the eastern barbarians.

The Ainos, in spite of this contact, continuing for thousands of years, have adopted nothing from the Japanese; they are what they were, a race standing at the lowest stage of culture, and probably

also not capable of civilisation; who, like so many other aborigines—as the dark inhabitants of Ceylon and Formosa, the natives of Australia, etc.—cannot bear the contact with a foreign higher civilisation, and perish in consequence of it. If this process has endured thousands of years in Japan, and is not yet terminated, the reason may be, that the race of the Ainos has always found space for extension to the north. Indeed, sixty thousand Ainos still perhaps live in Yeso, and a much smaller number in Saghalien and the Kuriles, but the spreading southwards of the Russian sovereignty, and the gradual, if slow, cultivation of Yeso by Japanese emigrants will, together with the small-pox and spirituous liquors, soon cause the last traces of the most ancient inhabitants of Japan to disappear. Moreover, there exists a great difference between the Ainos of the west and of the east coast of Yeso; whilst the former make a melancholy and miserable impression, and are treated by the Japanese as complete serfs, the latter are a cheerful people of hunters, fishermen, and shepherds, who wander during the summer into the interior of the island, and bear themselves with much more freedom and ease than their brethren on the other coast.

As concerns the Ainos themselves, they are of middle height, strongly built, and have dark rather woolly hair, which is shaved from off the forehead, and stands out at the sides; their eyes are dark, and often brown; the complexion of the young people light bronze colour, that of the old almost white; the beard is very strong and not shaven. Their hairiness is not so great as one would conjecture, from the name “hairy Kuriles”; individuals were very hairy on the breast, arms, and legs, but not more so than can any day be seen among ourselves. The lips are slightly projecting; this being in later life concealed by the beard. The expression of the face is good-natured. On the whole, they reminded me of the representations of many peoples of the South Sea Islands. The women are tattooed blue about the mouth, with the figure of a turned up moustache, which makes them very ugly. The first tattooing usually takes place in the seventh year, and is then gradually increased. On the east coast I have seen women with lines placed crosswise on the arms. The women wear earrings of metal, imported from Japan, and collars of blue cloth, on to which are sewn little leaden stars and pieces of glass, sometimes also of glass beads or small fruits. The clothing of both sexes consists of a yellow bast dress with blue ornaments; the dress is called *atsusi*, from the tree *ats*, (in the Aino language), from the bark of which it is prepared.

The behaviour of the Ainos, at least so long as they are under the eyes of the Japanese, is very submissive, and their manners are not without grace. If I presented them with tobacco or glass beads, they were called into the yard, where they sat themselves down in a row with crossed legs, their eyes cast down. The eldest, at the right side, acted as the spokesman, spoke with a very low voice, whilst all looked to the ground. At the conclusion of the thanksgiving, they raised their open hands, the palm inside, towards the face, which

they slightly incline, and then, whilst the end of the left middle finger touches the highest inner joint of the right middle finger (the touching of the second or the third joint is evidence of less respect), they stroke down the beard with the flat hand; the beardless on the left side of the hair (the shaving of the forehead takes place first on the appearance of puberty, that is, in the fifteenth year). The younger ones still continue to sit with eyes cast down.

The villages of the Ainos, seldom containing more than from two hundred to three hundred souls, frequently much less (in the interior there are said still to be independent tribes, but I have not seen them), are usually situate pretty near to the sea. The miserable huts stand irregularly near each other, and are built with posts and reeds in a longish oblong form, four to five feet in height, with a square roof equally high. They have no special opening for the escape of smoke, but only a small square door and a similar window aperture. Near each hut stands a storehouse, a square-pointed roof of reeds on posts, erected about four feet above the ground; the posts are covered with a piece of bark bent downwards in order to keep off the rats and the mice. An adjacent tree-stem, with steps hewn in it, serves for the purpose of ascending. Opposite to the huts, sometimes in a row, bears' skulls, which the owner of the hut has obtained, are fastened on forked branches placed together. Near one hut were nineteen stuck up, the fresh ones appeared to be placed at the top; from some of them still hung pieces of skin and flesh. The Ainos were not willing to sell them, and showed for them, as for the foxes' skulls which are preserved in the huts, a kind of idolatrous veneration. Perhaps this exhibition of the skull, which takes place with certain ceremonies (as the drink-offerings which are presented to them on special occasions), is a kind of atonement-offering, in order to propitiate the spirits of the slain bears. The drink-offering, which also takes place before each meal, is so presented that the Aino takes in the left hand the cup containing the Saki (Jap. rice brandy), and in the right a flat stick, about half an inch broad and a foot long, ornamented with carved work; with the stick he stirs up the beverage and so allows some drops to fall two or three times on the earth, whilst he raises his hand with the stick as high as his head; then he lifts up his moustache with the stick and empties the cup.

In the neighbourhood of the huts, opposite to those of the late inhabitants, as it seems, lie the graves scattered over the plain. The head lies to the east, and at this end of the coffin, which consists of thin boards and is only slightly covered with earth, is fixed for the men a spear-head shaped piece of wood, about three feet long, and for the women a low cross-piece, with a small strip of blue cloth fastened to it. On the graves of the women are placed broken pots. The huts and the whole household property of the deceased are said to be burnt on the death of the owner, so that he may leave behind nothing that he could regret; the poor are said to be buried without a coffin, but all their weapons are placed in the grave.

The bows of the Ainos, their chief weapons, are short and very

strong, made of pine wood ; they hold them horizontal for shooting. The arrows are short and thick, made of pine wood or cane, and very badly ; sometimes even not feathered. The points are of cane, sometimes of metal, very badly fastened, and always furnished with a deep blood-groove, in which a very deadly poison is placed. I have not been able to procure it. The Ainos affirm that it is always obtained in autumn, from the knots of a plant, in their language called *shirnûn*. When fresh, it is said to work so quickly, that a wounded bear, although the arrows are so poor that they cannot produce a deep wound, falls after a few steps. The poison is said not to produce any hurtful consequences when the flesh is eaten. Their knives—larger ones, sabrelike, and smaller ones—are very poor, and are imported from Japan ; the sheaths are broad, made of wood, and ornamented with rough carvings, and sometimes black-coloured linear decorations ; brown bark rings are added as ornaments to some sheaths and handles.

The art-skill of the Ainos is generally of a very inferior character ; except tobacco boxes, pipe cases, and flat sticks for beating cotton, the knife sheaths, bows, arrows, and clothes, everything, even their eating utensils, is imported from Japan. In general, the Ainos are at an incredibly low stage of culture ; they have no written language, and preserve the remembrance of important events by notches in wood or knots on cords. They appear to have no religious rites besides the above-mentioned ceremonies connected with the skulls of bears and foxes ; as little have they priests or any musical instruments.

Their family life and their constitution, if one dare make use of that expression, are quite patriarchal. The men marry only one wife ; concubines are unknown. The marriages take place for the men at from the eighteenth to the twentieth year of age ; for women at fifteen years, without any ceremony but a drinking feast ; so it is also at the birth of a child, which according to Japanese custom receives a name half a year later. The oldest men of the small branch (which, as I was told, only marry among themselves), exercise a kind of oversight. They are usually confirmed by the Japanese authority, obtain on certain occasions robes of office, and are presented to the governor of the island.

The Ainos of Saghalien are said to be more wealthy and civilized than those of Yeso, who alone I have seen ; but I believe that this appearance is chiefly occasioned by the embroidered clothes and shoes imported by the Chinese, the latter sometimes of seal skin.

What will become of this people, now approaching extinction, cannot be foreseen ; in a few decades they will have disappeared, and as they will leave no memorials behind them, it is desirable now to collect as much information about them as possible.

THE HAMATH INSCRIPTIONS.—ALPHABETS.

SIR.—Mr. Wake's allegation happens to involve a confirmation of my views, and not an objection to them.

The Tuarick or Berber written character is, it is true, still in use; but that does not determine the date of its prototypes to be modern, as he believes. The Berber is the successor to the Lybian, in which there are bilingual inscriptions, both Phœnician and Roman. In the British Museum is the famous Phœnician bilingual, the Thugga or Tucca stone. I pointed out in a paper to the Royal Asiatic Society, besides \ddagger and other resemblances, which may be casual, the occurrence on the Thugga stone of $=$ or \parallel , as in Hamath and in Babylonian hieratic and arrowheaded. In Lybian and cuneiform arrowheaded $=$ is the symbol for *son*, and so rendered in the Phœnician on the Thugga stone.

\ddagger I believe to be, in some cases, the equivalent of $*$, the determinative for God or king, and that from it was derived the square-headed \boxtimes .

As the Hamath, the Cypriote, the Himyaritic, and the Lybian contain characters having a resemblance and differing from the Phœnician, I have propounded the idea that there was an alphabet older than the Phœnician, propagated through distinct channels, and originating in Chaldæa.

Cuneiform scholars do not favour this opinion, and it is not in conformity with old ideas, but it is the one which best suits the facts of the history of civilisation. If true, it antedates the invention of a short alphabet.

Your obedient servant,
HYDE CLARKE.

P.S. Since writing the above, I have received the "Palestine Exploration Journal", containing an article of M. Clermont-Ganneau, on the additional inscriptions found at Aleppo. This palæographer entertains views identical with mine, as to the nature and comparative chronology of the characters, and proposes for them the name of Syrian. In the same number are some criticisms of the Rev. W. Wright, of Damascus, on my observations, but they do not need reply.

HYDE CLARKE.

THE JOURNAL
OF THE
ANTHROPOLOGICAL INSTITUTE
OF
GREAT BRITAIN AND IRELAND.

MAY 6TH, 1873.

Colonel A. LANE FOX, F.S.A., V.P., *in the Chair*.

THE Minutes of the last Meeting were read and confirmed.

The following presents were announced, and the thanks of the meeting voted to the respective donors:—

FOR THE LIBRARY.

From the EDITOR.—*La Revue Scientifique*, Nos. 43 and 44, 1873.

From the ASSOCIATION.—Proceedings of the Geologists' Association, vol. iii, No. 1, 1873.

From the EDITOR.—*The Spiritualist*, for May 1st, 1873.

From the SOCIETY.—Transactions of the Society of Biblical Archaeology, vol. i, parts 1 and 2.

From the SOCIETY.—*Zeitschrift für Ethnologie*. Fünf. Jahr. 1873, heft i.

From the EDITOR.—*Nature* (to date).

Lieut. S. C. HOLLAND, R.N., exhibited and described a series of original photographs of the Ainos, the inhabitants of the island Yezo, and various articles of Aino manufacture, which he collected in that country, and which would be noticed more fully in a special paper.

Mr. A. W. Franks laid before the meeting a Japanese roll, about forty-eight feet long, representing in coloured drawings various scenes illustrating the manners of the Ainos. The Japanese title of the roll may be translated "Drawings of the National Customs of the Aino-Barbarians." The scenes are

fourteen in number, each accompanied by a description in the Japanese language, and they may be described as follows: 1. Two Aino women carrying on their heads faggots of wood. 2. A young woman nursing a young tame bear, of which the cage is at her side. 3. Three boys engaged in a game of skill, consisting of sending javelins through a quoit-like object thrown by one of the performers. 4. Two women in the sea, from the depths of which they seem to have brought up long pieces of seaweed, like laver; on the rocks a man spearing a cuttle fish, and another fishing with a rod and line. 5. Two men in a boat, one smoking, the other harpooning a seal. 6. A man, woman, and child in a boat which seems to be about to strike a rock. 7. Four men dragging a bear by means of cords towards a tree; a woman following, probably the bear's nurse. 8. A number of men sitting on the upper of two stems of trees, between which is squeezed the head of the bear; in front is a man placing a piece of wood in the bear's mouth, at one side a woman sitting sorrowful, on whose hand may be distinguished a tattoo mark. Lieutenant Holland has suggested that this scene may be connected with a practice of sawing down the teeth of bears when they grow too old to be safe. 9. The body of a bear placed on a mat, surrounded by swords, a bow and arrows, baskets of eggs, drinking cups, etc. The subjects from 7 to 9 may relate to the bear feast, called "*osmia*."* 10. Two men sitting before a hut, with a large cauldron on the fire; a woman carrying a lacker cup on a tray. 11. Perhaps a continuation of the last; a large mat, on which are seated four men and a woman; two of the men are evidently chiefs, with dresses of Japanese stuffs and Japanese swords, one of them is drinking, and is lifting his moustache with the *ikubashi*, or stick used for that purpose. Two of the other men are saluting each other by placing the hands on the head. 12. A man about to cut the head off a woman who has misconducted herself; around her are three younger women making mocking gestures; one of the gestures is the *fica* of the ancient and modern Italians. 13. A strange ceremony, consisting of two men tightening the girdle of a third, while a fourth is running towards him with a club. 14. The family of an Aino chief going to pay a visit to the Japanese governor at Matsmai. It consists of a very aged man, two younger men, a woman, and a child, all holding each others' hands; the men with Japanese swords, and dresses partly Japanese partly native; they are followed by two servants carrying bundles of dried fish. In front is a Japanese official in state dress, and in the rear two Japanese Yakonins each with two swords; the Japanese governor's house terminates the scroll.

* See Siebold's "*Nippon*," vii, pl. 17.

In the British Museum are preserved two manuscripts, and a set of four rolls containing coloured drawings, all relating more or less to the Ainos. They were acquired by the museum with the Siebold library, and are numbered Oriental MSS. 963-968. Some of the representations are very similar to those in the roll exhibited, including boys shooting through a ring, the bear feast, where the knife with which the bear's claws are being cut off is plainly shown, and the curious scene with a club, like No. 13.

The Chairman exhibited articles found near Thebes, viz., two flint bracelets, two bone bracelets, four iron bracelets, a bone necklace, and a flint knife.

Mr. McCallum, the owner of them, says, "the bracelet and the necklace were found by a fellah, whom I have known some time, in a very rude mummy pit, by the side of a water-course, on the edge of the Plain of Thebes.

"I had not time to make a drawing of the pit, nor the mummy or mummies from whose bodies they were taken, nor am I clear that the necklace and the flints were taken off the same body; but as I am going again this year, I shall make a sketch of the bodies, the pits, and their surroundings, as I have no doubt that I shall find them exactly as they were left, it being in such a lonely and unfrequented place. The necklace and flints were the result of one night's search, and I have no doubt they help to carry back the antiquity of Egypt further than anything yet discovered, and are in harmony with the many wonderful things that are daily being brought to light in that interesting country."

A series of photographs of oriental races and tribes, lent by Mr. J. W. Johnson, was exhibited by the Director.

A quartz pivot and cup of the vertical shaft of a gold amalgamating mill lately in use in Piedmont, were exhibited by Dr. Clement-le-Neve Foster.

The following paper was read by the author.

Eastern Coolie Labour. By W. L. DISTANT.

IN accordance with a request to furnish a paper on such aspects of coolie labour, as particularly impressed me when in the east, I beg to present the following notes to the Institute. The working of a large sugar estate by means of European capital, European appliances, and European superintendence, with the manual labour of some hundreds of Asiatics, gives a favourable view of the strong dissimilarities in the capacity and aptitude for certain

work which exist among different peoples under almost the same conditions. The manual work on the sugar estates at Province Wellesley is performed by the following varieties of mankind, viz., Klings, Javanese, Chinese, and Malays. On the estate where I spent some time, there were employed some 360 Klings, 100 Javanese, 100 Chinese, and a sprinkling of Malays. The overseers at the works were of Portuguese extraction. The managers and assistants on the estates are usually English or Scotch. Neglecting these last, I will depict to the best of my ability the characteristic traits and employment of the principal labourers, taking them in the rotation of numerical superiority, viz., Klings, Javanese, Chinese, and Malays. This, I think, will prove that these four varieties of man differ strongly and remarkably not only in their aptitudes for certain work, but also in their capacity for performing the same. The conditions under which they labour are also important in considering the reasons which tend to form these strongly marked distinctions.

The Klings are emigrants from the Coromandel coast, in the hope of bettering their condition by a few years' labour on the estates. Their passage money on their arrival is paid by the planter, on the condition of their entering into an agreement with him to work on his estate for the term of two years, at the wage of twelve or thirteen cents, per day, from which usually one dollar and a half is to be deducted monthly until their advance is paid off. A loss is always incurred annually on every estate by this money not being defrayed in cases of deaths and runaways. They bring but a few women with them, so that polyandry is the common practice, and syphilis is one of the evils that the planter has to combat among his Kling coolies. The whole of the clothing of the common labourer is a string round the waist, which supports a piece of linen cloth passed between the legs. Some wear a slight covering for the head, but it is quite common to see them working in the fields bare-headed in the burning glare of the sun. Their tindalls, however, have always a cloth round the waist, sometimes a jacket, and nearly always a cloth wound round the head. These men are essentially a servile race, toilers without energy, dispirited, deceitful, and cringing. Corporal punishment seems all they dread, and is the only reward for wrong-doing of which they seem to approve. A friend of mine discharged his Kling cook for some offence. "Why does master not thrash me instead of sending me away," whined this wretch. "Let him flog me first and see if I cannot do better." This remedy was not tried. Their dwellings would, if allowed, be kept in a filthy condition, though they are fond of bathing at all hours of the day. They are unwilling workers and require constant supervision. It is

useless to give them a task in the fields, at the completion of which they could leave, as is done in the cases of the Javanese and Chinese. They go into the fields at 6 a.m. and return at 11 a.m. They again go out at 1 p.m. and return at 6 p.m. Weeding, manuring, planting cane, and as a rule all the lighter work of the estate is done by them. They neither possess the will, strength, nor aptitude to effect the heavy banking up of the cane. To linger over their work, doing as little as possible, seems to the Kling nature the best way to get through life.

The Javanese are of a very different temperament to the Klings. In stature they are moderately short, with features sullen, obstinate, and determined. They require very different management to the Klings, and exhibit a far higher and more manly character and appearance. Their dress also shows more civilisation. Short trousers in all cases, sometimes supported with a sash, and mostly surmounted with a tunic confined round the waist with a belt. The head, which is closely shaven, is covered with a skull cap, and a large conical hat of reeds is worn in the fields. These men are generally hadjis, having performed their pilgrimage to Mecca. They are brought from there on condition of their engaging themselves to work on the estates, when the captain is paid their passage money by the planters. They are bound for a term of two or three years in the usual way, a deduction for their passage money being made every month. They do not associate with the Klings, on whom they look down and despise, and, unlike them, they would probably resent a blow with a thrust of a kris. The only and greatest punishment that can be inflicted upon them is cutting their pay. These men cannot work either properly or willingly without having a task set them; they will know what they are expected to do and what they have to do. Of course great difficulty is found sometimes in agreeing with them on the size of the task, and they require supervision to see that they do not scamp their work in their hurry to leave the fields. Should they be detained late of an afternoon they will leave their work for their devotion, repairing to the nearest canal and performing their ablutions, a cloth is spread upon the ground, and with their faces to the setting sun they go through their religious duties. The Christian proprietors are not quite so orthodox, the work of the estates being always carried on for half the Sunday. The Javanese agricultural labourers as thus seen are an orderly people. They are revengeful, but not without being provoked. Unlike the Klings, they are clannish. Their dwellings are an example of cleanliness, but they have a bad name on all the sugar estates. They will have a set task, their wish for an easy one and inclination to scamp a moderate one being their

chief failing. They have a mania for eating sugar-cane, and nothing seems to prevent their taking it. Their favourite work is banking up the cane.

The Chinese are inseparable to an estate and fulfil a variety of occupations. Not only tillers of the soil, but woodcutters for the furnaces; carpenters and masons are supplied by these people. The labourers in the fields are the most numerous, and are engaged in a different manner to both the Klings and Javanese. A Chinaman with a knowledge of the work, a little capital, and some assistance in that way from the manager engages a number of men to work on the estates, he paying their wages, and receiving from the planter a contract price for all work done. This contract price is so much per or long for weeding, banking, cutting cane, etc., and varies according to the nature of the work. This Chinaman, therefore, stands as a middleman between the labourers and the planter. He engages his men, I believe, by obtaining emigrants from China, paying their passage money and deducting the same from their wages, which I understood were reckoned at the contract price he received, but from which a commission of ten per cent. is withdrawn. He likewise supplies them with food, for which he charges each man about five cents per day. And he is also at the expense of supporting cook, tindall, or overseer, etc. Their dwellings usually exhale a most disagreeable effluvium, but are decorated gaudily with coloured and gilded paper inside. These men are excellent gardeners, growing a variety of salads on their small garden plots, and go in largely for keeping and breeding fowls, ducks, and pigs, the last especially, in which they excel all others in management. Of course they gamble—all Chinamen do—and the head Chinaman makes a considerable profit from the opium with which he supplies them, and also from the manufacture of a kind of arrack, in the sale of which the Klings also assist him. The dress of the men in the fields is a blue cloth round the waist, and a hat of the Javanese description, but larger. They are a cheerful body of men and keep themselves quite distinct from the other coolies, but their work requires close inspection. The woodcutters work in the same manner, all transactions taking place with one man. They cut down the trees in the jungle, which they split into logs some three feet long, and boat the same up the creek to the landing place of the estate. Here they stack it to a fixed height, and it is measured and paid for so much per foot. The Chinaman's favourite work is cutting the cane, he is industrious and not afraid of work, but has a strong propensity to cheat if possible.

Few Malays work on the estate, we had some dozen men who thrashed the canes, that is stripped off the dead leaves, and our

pig watchman was also a Malay. This last individual seemed quite happy in his occupation of destroying wild pigs, with the opportunity of sometimes killing a tiger; but for the regular work of the estates, or for regular work of any kind, the great majority of these people are decidedly at present quite unfit, and we may therefore cease to discuss them as coolie labourers.

In thus glancing at the Kling, Javanese, and Chinese labourers, we notice a great dissimilarity in their capacity for work in general, their aptitude and dislike for certain work, and also in their method of working, viz. by task or otherwise. We also remark a difference in their social condition and also in the terms under which they are engaged. The Klings on the estates are abject and poor, have no union among themselves, are punished with the ratan, and seem scarcely able to work except under fear of it. They have no task, but work from horn-blow to horn-blow. They are bound by their contract to stay and work, and seemingly wish to evade both these conditions, but are too imbecile to succeed. The Kling insists on being driven. The Javanese, on the contrary, well described by Crauford as being almost exclusively an agricultural people, work sullenly on to repay the debt they have incurred on their pilgrimage and make sufficient to carry them home. They are strongly united, and being willing to work, insist on a task. A blow or injury to one would be resented by the whole gang. But their sole desire is to get away. The Chinese, on the contrary, seem to prosper better under the employment of their own countrymen, cultivate their plots of ground, breed their fowls and pigs, and seem contented with their position and lot. The Chinaman seems also to prosper in contact with the European, he bargains with him, whilst the Javanese sullenly works for him, and the Kling sinks to a crouching menial in his presence. The European seems affected in the same way, he can chat with the Chinese, tolerate the Javanese, but despises the Kling. I therefore cannot believe that the Klings will ever be improved by contact with the European. The planters as a rule are educated gentlemen, and do their best for the welfare of the coolies. But what can they do when there is nothing in common between them. On one side is European civilisation and prejudice, on the other side eastern ignorance and prejudice. The European wishes to make sufficient to enable him to return home; the various coolies are imbued with precisely the same feelings. Hence both will be glad the sooner the bond between them is broken. Of course, in these remarks I am strictly confining myself to the coolies as observed on the sugar estates. Missionary enterprise amongst them I consider to have been a complete failure, and to promise no better prospect in the future.

The only success at all achieved has been effected by the Roman Catholic missionaries, chiefly amongst the Chinese and Klings; but even in this case an ecclesiastical whitewash is all that can be rejoiced over. The Chinaman or Kling is the same as he was before, sometimes more troublesome to deal with, from a belief he seems to hold, that the embracement of Christianity gives him a claim on his European employer for greater pay and less work. The Java Hadjis have a strong religious belief of their own, in which faith they have undertaken the pilgrimage to Mecca, and for which they are now labouring on the estates in their endeavour to reach home. Minds possessed with these strong beliefs are very unremunerative ground for the reception of new religious dogmas. The need of money is what has really brought these different people together. English, Scotch, Portuguese, Klings, Javanese, and Chinese are only attracted together in the hope of gain, and under this creed progress and civilisation generally remain in the hands of the strongest and richest party.

DISCUSSION.

Dr. A. CAMPBELL said that coolie emigration from India was a subject of considerable importance in ethnology, as well as in its bearings on the labour question, and that he had hoped to hear the opinions of some gentlemen connected with Assam on the subject, as he believed that at one time there was a good deal of dissatisfaction expressed by the planters in that district at the facilities given to the exportation of coolies to the Mauritius, Bourbon, and the West Indies, while they were suffering much in India from scarcity of labour, and certain restrictive rules imposed on coolie transit to the sea districts. Dr. Campbell could not from actual experience speak to the effects on the coolies from their removal in large bodies from their hill homes in Central India to the Colonies and Assam, as he was most concerned when in India with a tea planting district, Daejeeling, where local labour was abundant. He believed, however, that the utmost possible vigilance was scarcely sufficient to protect the coolie enlistment and their removal across the seas, from the imputation of modified slavery. Dr. Campbell added that Mr. Distant's account of Coolie labour in the Straits of Malacca was very important in one particular. He has shown us that for each of the four races or tribes employed by him a separate and distinct mode of management is required with reference to their distinct idiosyncrasies and peculiarities. When we admit this necessity for prudence and caution in the management of a single sugar factory in India, it is almost overwhelming to think of the mischief that might ensue from careless or hasty legislation applied to the thousands of different tribes that make up two hundred millions of fellow subjects in that country.

In reply to Dr. Campbell Mr. DISTANT said that he did not consider the coolies were particularly happy and contented. It is pos-

sible that the Klings before leaving their own country may have entertained very sanguine hopes as to the nature of the life on the sugar estates. The work is not unnecessarily laborious, but is no doubt more than is consistent with the easy life they had wished to lead, and hence they are not so satisfied with their position. With reference to the number of coolies who reach home again from the estates he would say nearly all the Javanese do so, but the rate of mortality was much greater among the Klings, and they also possessed little capacity for saving sufficient to enable them to pay their return passage.

The Director read the following paper for the author.

THE WESTERLY DRIFTING of NOMADES, from the FIFTH to the NINETEENTH CENTURY. By HENRY H. HOWORTH. PART X.
The ALANS or LESGHS.

THE ethnology of the Alans involves a question that has divided ethnologists for many years. Klaproth, who was very seldom wrong, wrote an elaborate paper to prove that they were identical with the As or Asi, and that the Ossetes of the northern Caucasus now represent them. On the other side the French geographer and ethnologist, Vivien St. Martin, who, without Klaproth's Encyclopædic range of knowledge is a most learned and careful inquirer, has written a paper to disprove this. Klaproth has been supported by the very great authority of Schafarik, the author of the "*Slavische Alterthümer*", by Zeuss (*Die Deutsche und die Nachbarstämme*) and others. M. St. Martin stands almost alone. Dr. Latham, who has an impossible theory that every nomadic race of eastern Russia is Turkish, is of course consistent in denying the identity of the Ossetes and Alans, but he furnishes us with hardly any facts, and he is alone so far as I know in making the Alans Turks.

An examination of the whole evidence must convince a reasonable inquirer that Klaproth has been for once misled by a plausible theory, and that if we accept his conclusions on this subject we cannot unravel the very difficult ethnography of eastern Europe during the centuries following the Christian era. The Asi and Alani were close neighbours, they were often found fighting on the same side, and perhaps had sometimes common chiefs, but they were very different people, both in origin and language. The Asi or Ossetes are an Arian race, speaking a corrupt Arian tongue, the Alans were, on the contrary, Turanians.

The object of the following paper is to prove that the Alans

are now represented by the Lesghian tribes of Daghestan, a view which I believe to be in a great measure new.

Let us commence by briefly considering Klaproth's proofs. In 1439 Jehosaphat Barbaro writes, "L'Alania è derivata da popoli detti Alani, liquale nella lor lingua si chiamano As." Klaproth makes a great parade of this extract (see "Asia Polyglotta", 85), but, as Dr. Latham shrewdly says, the Alans are here said to call themselves As, while the Ossetes always style themselves Iron, the name Ossete being one given to them by their neighbours.

Carpino talks of the Alans or Ases, but he was a very uncritical traveller, and we are not sure that the blunder is not due to a copyist, for William of Ruysbroek, the Franciscan monk, who shortly afterwards went the same way to the great Khan's court, has the following passages: "Vinrent vers nous certains Alains qu'ils appellent *Acias* ou *Akase* qui sont Chrétiens à la Grecque." "Les Alains ou Acas, qui sont Chrétiens et combattent encore tous les jours contre les Tartares." These Akas or Acias are surely not the Ossetes or Iasses, as the latter were called in the middle ages, but the Akusches, a distinguished Lesghian tribe. Schafarik has added one more; he tells us that the Georgian annals mention the Ossi as being allied with them in their campaign against Persia in A.D. 87, and that the Armenian historian who placed this invasion in 90 names them Alans. But the Georgian annals are quite untrustworthy on such a point. The very confusion in the date is enough to prove this. The Armenian annals are of much higher authority and are probably correct.

Out of these exceedingly slender materials has the theory been built up by Klaproth, that we have in the Ossetes the descendants of the Alans. The Ossetes were no doubt the Iasses, and the As of mediæval writers: in this every one agrees. It is unfortunate for Klaproth that several writers who were well informed on the subject mention both Asi and Alani as contemporary tribes. Ibn Sayd (quoted by Abulfeda) speaks of the Alallan with their capital Medinet Allanye (east of the Abkhasi) as neighbours of the Assen (Alas). (See Dr. Bastian "Zeitschrift für Ethnologie", 3, 128). This is exactly our theory, the Lesghians being the neighbours of the Ossetes. Again, Abu Obeid Al Beiri, who died A.D. 1094, has the following passage, which I take from the thirteenth volume of the "Asiatic Journal": "To the right of the castle of the king of the Asseriri (*i. e.* As or Ossetes) is a road which passes through the mountains and fields, which travellers following arrive after three days in the country of the king of the Alanis. The king is a Christian, but the people of his country adore idols. The Chi-

nese also speak of two nations, the Sai and the Alanna, who were living in close contact. (See Klaproth "Tableau Historique de l'Asie.") Ptolemey mentions Osiliens, Aseens, and Alani. He also speaks of Alanorses. Constantine Porphyrogenitus, in his book on the "Court Ceremonies of Byzantium", mentions Alania and Azia, the former with a king, the latter with a number of petty chiefs only.

Cantacuzenus speaks of the king of the Bulgari, Asaniori, Blachari, Rhossi, and Alani. (See vol. 3, page 94, in the Bonn edition.) Chalcocondyle, p. 467, speaks of the king of the Scythians fighting against the Alani, Hunni, and Sasi (? Asi).

These quotations are a sufficient answer to the meagre and decrepit evidence relied upon by Klaproth and his followers. Besides this, there is the very strong internal probability against a small tribe of 50,000 men, with no special renown in recent years, representing the great nations of the Alans, who in ancient days were the scourge of half Europe, and whose prowess continued down to recent mediæval times, when they opposed such a bold and successful front to the Mongols.

Having disposed of the claims of the Ossetes to be considered as the representatives of the Alans, let us now consider the Lesghs, and commence with the last consideration we have dealt with.

Among the tribes of the Caucasus none have won such a name for intrepidity as the Lesghs. Their heroic struggle against the Russians is well known in the west. Their hero, Schamyl, was long a household word with us, and we can see in his followers worthy successors of the opponents of Batu Khan and his Mongols. Again, next to their warlike aptitude, the distinguishing feature of the Alans is their skill as armourers. Laonicus Chalcocondyla speaks of the Caucasian Alani as very brave men, and most skilful in warlike affairs, and says they manufacture the best cuirasses. Their arms, which are made of iron, are called Alanic. William of Ruysbroek has the following: "Travelling along among our escort were two men, who bore a species of armour like our haubergeon or haleeret, and on our asking them whence they got them, they said from the Alani, who were excellent forgers." To go back to ancient times, Tacitus thus speaks of the Roxolani, whose culture was derived from the Alans, if they were not more nearly related to them. "Their weapons are long spears, or sabres of an enormous size, which they wield with both hands. The chiefs wear coats of mail, formed with plates of iron sewn on tough hides, impenetrable to an enemy's weapon, but very cumbrous to the wearer."

Now among the Lesghs there is one tribe, the Kubetschi, also called Zirgucran, whose name, as we shall presently show, ac-

tually means makers of coats of mail, and in modern times the Persians, the Circassians, etc., depended upon these mountain smiths for their best arms.

We must now examine other conditions. During the first three centuries after Christ, the Alans were scattered about Europe in all directions, but after the death of Attila, and even before that, the great bulk of the Alans gravitated towards the Caucasus. Suetonius mentions them as living in the Eastern Caucasus as early as the days of Tiberius. Under Vespasian they forced the Caspian gates into Media. The Armenian chronicle names another invasion of theirs into Persia in A.D. 90.

Procopius places them in Daghestan. When Zenarchus was on his journey to the Turkish camp, he passed through Alania after crossing the Caucasus. The ambassador of Justinian the Second, who passed this way in 709, did the same. The geographer of Ravenna says, "Desuper jam dictas patrias (Laziam, Abasgiam) ad partem septentrionalem ponitur patria quæ dicitur Alanorum."

Ruysbroek twice calls the Caucasus the mountains of the Alani. The most ancient Arabic author who mentions the Alans is Salem, named El Terdjénian, who visited them in 842. He merely names them on his voyage across the country to Derbend. Ibn Fozlan, Ibn Haukal, and El Istakhri also only just name them. Maçoudi says, close to the country of Serir (*vide infra*) is that of the Alani. Ibn El Ether in describing the campaign of the Mongols under Subutai, says, that having passed the defile of Derbend, they advanced upon the Alans.

This wide range of authority all confirms the position of the Alans as being in the Eastern Caucasus in the present country of the Lesghs. Again, "Between the Alan country and the mountains Kabakh (the Caucasus) is a castle called the Alan Gate, built in ancient times by a king of Persia called Asfendiar, son of Ioustap, son of Lohrasb. He placed a garrison there to prevent the Alans invading the Caucasus." (Maçoudi, in St. Martin's "Geographie Ancienne", etc.) The Arabs know this defile as Bab al Alan, and the Persians as Dar i Alan, both meaning the gate of the Alans. The Georgians of the tenth and eleventh centuries also call it Darialan. Of this Darial seems to be a corruption. (See Brosset, "Voyage Archéologique", 72.)

Among the Lesghian tribes one of the chief is that called Kazikumuk. Now, the prince of the Kumuks who caused them to embrace Islamism was called Alan Schah. (Bastian, *op. cit.* 128). One of the chief tribes of the Alani as told us by Iornandes, whose grandfather was an Alan, was that of the Scyri.

This name has puzzled many inquirers, *vide* Zeuss and others. We have no difficulty in identifying it with Zirgueran, the mediæval name of the most renowned of the Lesghian tribes; this also *pro tanto* proves our position. These various and diverse proofs accumulate the probability and sanction the conclusion that we must look to the Lesghs of the Eastern Caucasus if we are to find the descendants of the renowned Alans. We must now criticise the name Lesgh and its connotation, for here as elsewhere a perverse classification and nomenclature has done much harm to ethnology. The term Lesgh as used in ethnology is very vicious. It either means too much or too little. If by Lesgh be meant a specific and homogeneous race, it ought to be limited very considerably; for in ordinary authorities on ethnology it is made to include at least four races having separate histories and a considerable diversity in manners and in language. If Lesgh be used as the generic term for those tribes of the Eastern Caucasus, which have a large common vocabulary, etc., then it is too limited. Klapproth, Guldenstadt, and others, have needlessly confused the ethnography of the Northern Caucasus by the creation of a division which they sharply define from the rest, and which include the Ingushes, the Tchetchentses, Tushi, Karabulahs, etc., known collectively as Mitzdghoghi. I believe that this division is not only unnecessary, but very misleading. The Ingushes, etc., have as much right to be classed in the same generic division with the Avars as the Didos and Kazikumuks have. They have a very large common element in their vocabulary, as the following example taken from Klapproth's own lists in the *Asia Polyglotta* abundantly prove. Avar includes the sub-dialects Dschar, Avar, Chundzak, etc., and Mitzdghoghi, the Ingush, Tushi, and Tchetchents.

AVAR, ETC.			MIZDGHOGHI.
Eye ...	... beer, ber	...	... berik, berg
Beard ...	... mejesch, metschi	...	... match, maw
Belly ...	... shech	...	... guiki gee
Tree ...	... guet, hueta	...	... che chie
Blood ...	... pih, bih	...	... zi, jiah
Brother ...	... waas, watz	...	... wasche wascho
Butter ...	... nah	...	... däte
Egg ...	... chono, hono	...	... chua, ue
Ice ...	... zuer	...	... tcha
Iron ...	... maach	...	... aik achik
He ...	... chadan	...	... waje
The Earth ...	... ratl	...	... latte
Fat ...	... nach	...	... miech
Fire ...	... za	...	... tze, zie
Flint ...	... modzo	...	... makatz
Tinder ...	... saak	...	... kadschem, kakama
Fish ...	... tzua	...	... tzaara
River ...	... or, chor	...	... malar(?) chi
Foot ...	... pog	...	... keeg, kog

	AVAR, ETC.	MIZDGECHI.
Gold ...	... arotzo	... achtze
Goose ...	... kaas	... kas
Barley ...	... ook, makcha	... muk
Yesterday ...	... son	... silchan
Yellow ...	... madschob	... madscha
Sight ...	... humerat	... iuchemerin
Gold ...	... mesed	... detchi
Great ...	... kudab, juko	... dakko
Hand ...	... kwer	... kulg, kuk
Hard ...	... zakaw	... tchaagwn
Hide or skin	... { kech, keg	... kaka
	... { zoko	... zualka
Oats ...	... ugu, necha	... ken
Heart ...	... rak	... dog
Hail ...	... goro	... karu
Today ...	... tchikkad	... tgada
Stag ...	... tzaan	... sei
Millet ...	... mutz	... burtz
Heaven ...	... sob	... siglie
Heat ...	... chenti	... iaucten
Honey ...	... hodzo, nudzo	... modz
Breeches	... tatzhur	... chatzki
High ...	... tchahab	... tchagho
Day ...	... choi, woi	... poln
Year ...	... soso	... tcho
Calf ...	... betze	... asa
Cat ...	... kettch, pitchik	... koto, zizik
Lune chalk	... kiradche	... kir
Cold ...	... chuatzala	... tchile
Garment	... reedkautschi	... kartzi
Knee ...	... guga, naku	... gua, gugu
Lamb ...	... hoch	... tchug
Leather ...	... nakai	... kakka
People, crowd	... otch	... naach
Maiden ...	... yasé	... johe
Man ...	... zogi	... stag
Meal ...	... ch...rootl	... har
Knife ...	... nuus	... urs
Moon ...	... moots	... but, butto
Cap ...	... tagur	... ku
Nail ...	... maach	... maru
Nose ...	... muchuchi	... mertchi
Low ...	... uecha	... locho
Ox ...	... ots, oz	... ust
Hairy ...	... kui...	... kur
Back ...	... much	... buko
Sheep ...	... eu, ache	... ustge
Sister ...	... jas, heats	... jatcho
Shoulder	... getch	... mekcher
Ship ...	... gjammi	... kema
Son ...	... uas	... ua
Sun ...	... baak	... malch
Star ...	... zoa	... seta
Day ...	... dchaka	... tcha
Daughter	... ias	... jio, jugik
Clay ...	... tchabar	... tapur
Father ...	... dadi	... dada da
Wheat ...	... rochi	... ka
Water ...	... chun	... chi
Roadway	... nuch	... nik

		AVAR, ETC.		MIZDGHEGHI.	
White ...	...	kaka	...	kain	...
Married woman ...	...	tzuck	...	stjuo	...
Tooth ...	...	zahbi	...	tzargich	...
Goat ...	...	ze	...	gase	...
Tongue ...	...	maats	...	mot, motte	...
1 ...	...	zo	...	tza	...
2 ...	...	k'igo	...	tchi	...
3 ...	...	tchahgo	...	koe	...
5 ...	...	tchugo	...	pehi	...
9 ...	...	itzgo	...	itch	...
Saturday ...	...	tchamat	...	tchabat	...

		KAZIKUMUK.		AKUSCH AND KUBETCH.		MIZDGHEGHI.	
Pig ...	...	burku	...	bkaka	...	hake, khaka	...
Sword ...	...	tur	...	tur ...	...	tur	...
Sulphur ...	...	tchamatu	...	—	...	sagmal	...
Son ...	...	ers	...	durha	...	ua	...
Steel ...	...	tchandan	...	—	...	andun	...
Stone ...	...	tehern	...	—	...	kera	...
Star ...	...	zuka	...	—	...	sied	...
Day ...	...	kini	...	—	...	dini	...
Daughter ...	...	dutchi	...	dursi	...	iohi, iugik	...
Clay ...	...	luchi	...	—	...	chat	...
Wheat ...	...	letcha	...	anle	...	ka	...
Wine ...	...	tchur	...	tchalugr	...	tchajir	...
Tooth ...	...	kertchi	...	—	...	tzergtchi	...
Tongue ...	...	mas	...	—	...	mot mut	...
1 ...	...	zaba	...	za ...	...	tza	...
2 ...	...	—	...	quial	...	tchi	...
5 ...	...	chewa	...	chujal	...	pehi	...
7 ...	...	errulwa	...	weral	...	uor	...
Thursday ...	...	erwa	...	—	...	iere	...
Saturday ...	...	dkuma beri	...	—	...	baraske	...
Man ...	...	—	...	murqul	...	mairilk	...
Maize or Indian corn...	...	yachuale ke	...	hudehlau ke	...	h'adeh ka	...
Maiden ...	...	duchi	...	dursi	...	judik	...
Knife ...	...	dchila	...	dis ..	...	urs	...
Brass ...	...	—	...	es ...	...	ges	...
Moon ...	...	bars bers	...	baz (dido butze)	...	but	...
Morning ...	...	hunti	...	—	...	kan	...
Mother ...	...	ninn	...	nan	...	nana	...
Mouth ...	...	sumabeck	...	—	...	bagga bak	...
Cap ...	...	kapa	...	kapa	...	kii	...
Nail ...	...	mich	...	mekiva(andinutla)	...	mare	...
Night ...	...	chu	...	—	...	busu	...
Nose ...	...	mai	...	mirr	...	mara	...
Ox ...	...	—	...	nuz	...	ustu	...
Ear ...	...	—	...	lege	...	lerk	...
Penis ...	...	—	...	tana	...	ten	...
Rain ...	...	kural	...	—	...	kare	...
Salt ...	...	psu	...	dshe	...	tuchi	...
Sand ...	...	kum	...	—	...	chum gum	...
Sister ...	...	su ...	...	dutzn	...	itcha	[tkene
Old ...	...	—	...	ukna okna	...	kani tkaanim	...
Beard ...	...	—	...	muzul musull	...	madsk mekatchi	...
Tree ...	...	—	...	kalki kalkui	...	che chie	...
Mountain ...	...	—	...	dubura	...	bird	...
Leaf ...	...	—	...	kere...	...	g'a	...
Ram ...	...	—	...	burherk	...	burrek	...

		AKUSCH AND		
		KAZIKUMUK.	KUBETCH.	MIZDGEGLI.
Brother	...	... usu	... utzu	... watzio
Butter	...	... na ...	... nerck	... date
	...	...	... kuta	... but
Egg	...	... gunuk	... to'ka	... chua gaga
Iron	...	... mach	... mech	... aik
Fat	...	... mai	...	... miech
Feather	...	... bäl...	... pala	... pielek
Fire	...	... za ...	... za ...	... tze
Fish	...	... haba	...	... haeme
Flesh	...	... dik...	... dih...	... dilch ditch
Fort	...	...	... katchi	... kok koeg
Goose	...	... kas...	... kas...	... kas
Barley	...	... ka ...	... mu'ke	... muk
Yesterday...	...	... lechu	... sā ...	... silchan
Gold	...	... musi	...	... detchi
God	...	... saal	... zalla	... dala
Great	...	... kunosa	...	... dochon
Hand	...	... kua	... kak	... k'uk kuki
Skin or Hide	...	...	... guli	... kaka
Oats	...	... sus	... susul	... sus
Heart	...	... daku	... urke	... dugh dog
Shirt	...	... hukwa	... hana	... kotch
Hay	...	... gula chula	...	... jol
Millet	...	...	... mitza	... burtz
Heaven	...	... sur...	...	... siglie
Honey	...	... niz...	... wasa	... mos
Breeches	...	... hatzak	...	... chatki
Wool	...	...	... urzuli	... das
High	...	...	... okanne	... liaken
Dog	...	... ketchi	... chwa	... tkari
Year	...	... tzin	... dos...	... tzia
I	...	...	... du ...	... so
Calf	...	...	... kuatcha	... asa
Cat	...	... titu	... kata	... koto
Cheese	...	... nis...	... nusia	... netché
Lime Chalk	...	... kiratch	...	... kir
Cold	...	...	... dalé	... tchile
Child	...	...	... durrha	... bader
Small	...	...	... nikase	... kazgo
Boy	...	...	... durha	... bair
Bones	...	... tork	...	... teesk
Knee	...	...	... kuqua	... gua
Lamb	...	... tki...	...	... tchechi
Leather	...	... changon	...	... kakka
Lips	...	... murtzi	...	... bardatshi

These lists are very striking, considering the very small material from which they have been compiled. I might have done for the Dido and Andi divisions of the Lesghs what I have done for the Avar and Kazekumuk, etc., with the same results, but these will suffice. The conclusion I wish to draw from the comparison is that there is a very great element common to both the so-called Lesghian and the so-called Mitsjeghi tongues, and that they are not generically separated as Klaproth and others have separated them. Further the forms of the language, the

antecedents and customs of the race, etc., make it very clear to myself that the type of the genus is the Mitsdjeghi, and that the various so-called Lesghian tribes, where they differ from it differ from the normal standard by the addition of foreign elements which it is not impossible to trace. This I believe to be an entirely new reading of the evidence, and to explain much that has hitherto been vague and confused. If it be the true reading, it follows, from what has been previously said, that the Mitsdjeghi are typical Alans, and that the other tribes who live to the east of them are Alans sophisticated and altered by mixture with other races. In future papers on the Bulgarians and Huns, I shall show how thoroughly this view coincides with the best views about those much misunderstood tribes.

It is a pity that we have hardly any material to test this conclusion in the way of language. I only know of one Alan word, for which I am indebted to Pallas. It was not until long after the greater portion of this paper was written that I met with this passage, and it is a great satisfaction to me to be supported in my theory, which has been elaborated from completely independent inquiries, by the veteran Russian traveller and naturalist. The passage to which I refer is contained in the first volume of Pallas' "*Travels in the Southern Provinces of Russia*", p. 437, and reads as follows:—

"The Mitzdshegis or Kisti appear to be the remainder of the true Alanians. In a maritime journal *Periplus*, extracted chiefly from Arrian and Skymnus Ghilus, the Tauridan city of Theodosia is called by the compound Alanio-Tauridan name of Ardauda, which in the Alanian dialect signifies seven gods. This name still bears the same signification in the modern dialect of the Kisti, among whom *Nar* expresses the number seven, and *Dada* denotes a father or God, and it is remarkable that the term *Thaut*, among the worshippers of fire in the vicinity of Baku, to this day signifies the name of God. I could not discover that in any other language spoken by the natives of the Caucasus the numerical word seven has a sound analogous to that of *Ar* or *Nar*." Other facts support the main view thus, the Arabs state that on leaving the country of the Gumikes one enters upon that of the Alans, the modern Mitsdjeghi lie immediately in contact with the Kumuks. We have already seen reason for displacing the Iasses or Ossetes from their present occupancy and making them to have emigrated southwardly recently, and for making the Abkhasian Kazaks and the Mitsdjeghi close neighbours. The same Arab authorities make the Caschakes to bound the Alans on the west. If our opinion be right we then make the Mitsdjeghi to include *Dariel*, the old gate of the Alans. The Arabs tell us that the country of the

Alans was well cultivated and so thickly inhabited that when one cock crowed all the others replied to the extreme limits of the country. The king of the Alans, they tell us, bore the hereditary name of Kerkenedadj, otherwise read Kerkernedadje and Kedkendadje, his capital was called Magass. On the Tcherek, a tributary of the Terek, is still a place with the name Makhatschla, which d'Ohsson supposes may represent this Magass. (See d'Ohsson "*Les Peuples du Caucase*", 23). He had also country houses. He had an army of 30,000 horsemen. One of his predecessors became a Christian in the first century of the supremacy of the Abassides, which dynasty mounted the throne in A.D. 749. Before this date the Alans were pagans, they soon abjured Christianity and drove out the bishops and priests who had been sent among them by the Roman emperor. Before collecting the various authorities who name the Alani in ancient times, we may profitably extract from Ammianus Marcellinus the detailed account of the customs, etc. of the ancient Alans. He tells us that, on the other side of the Don, the Alans inhabited the enormous deserts of Scythia, deriving their own name from the mountains around; that like the Persians having gradually subdued all the bordering nations by repeated victories they had united them to themselves and comprehended them under their own name. Among these were the Neuri, Budini, Geloni, and Agathyrsi. * * * The Alans, like the nomades, wandered over enormous districts; but in progress of time all the tribes came to be united under one generic name and were called Alani. They had no houses nor ploughs, but lived solely on meat and milk. They lived in their waggons, which were covered with an awning of bark, and when they came to any pasture they pitched their waggons in a circle. In them husbands and wives slept together, and children were born and brought up. Wherever these waggons were planted, they deemed it their home. They drove before them their flocks and herds and were especially careful of their horses. The fields in their country were always green and interspersed with patches of fruit trees. All their old people and the women kept close to the waggons, and occupied themselves in light employments. The young men trained to horsemanship from their earliest youth disdained to walk. They were also trained by careful discipline of various kinds to become skilful warriors. Nearly all the Alans were men of great stature and beauty, their hair somewhat yellow and their eyes terribly fierce. The lightness of their armour rendered them rapid in all their movements, and they were in every respect equal to the Huns, only more civilised in their food and their manner of life. They plundered and hunted as far as the sea of Azof and the Kimmerian Bosphorus, ravaging also

Armenia and Media. Danger and war were pleasures to them, and among them that man was called happy who lost his life in battle. Those who grew old, or who went out of the world from accidental sicknesses they pursued with bitter reproaches as degenerate and cowardly. Nor was there anything of which they boasted with more pride than of having killed a man.

Their most glorious spoils were the scalps they tore from the heads of the slain; these they used as trappings and ornaments on their war horses. In their country there was neither temple nor shrine, nor even a cabin thatched with straw, their only idea of religion being to plunge a naked sword into the ground with barbaric ceremonies, and then they worshipped that with great respect as Mars, the presiding deity of the regions over which they wandered. They presaged the future in a most remarkable manner, for they collected a number of straight twigs of osier, then with certain secret incantations they separated them from one another on particular days, and from them they learnt clearly what was about to happen. They had no idea of slavery, inasmuch as they themselves were all born of noble families, and those whom they appointed to be judges were always men of proved experience and skill in war. (Amminianus Marcellinus, Bohn's trans., 581-2.)

The Alani are first mentioned by the Persian and Chinese historians. Firdusi tells us the Alanan dwelt in the most ancient times on the northern side of the country of the Paropamisus, near the land Ghur or Ghordzah. The Chinese, who call them An-thsai, tell us they were known to themselves since the time of the Han, they numbered at least 100,000 good archers; their customs resembled those of the people of Sogdiana, upon whom they were dependent. Their climate was temperate, their country bordered upon some great lakes and marshes which had no limits. There were many mulberries, pears, etc., among them. They were nomades. In the time of the second Han dynasty they changed their name to A-lan-na.

Their first expedition into the west was made 20 B.C. They came under the influence of the Sogdians in the first or second century of the Christian era, and in the third century they lived eastward of the Caucasus, in the neighbourhood of the Roman empire, free from the yoke of Sogdians. Later, between 435 and 480, they were called Suth or Suth (? a Chinese form of Scyth). After the year 565 the Chinese heard no more of them. Remusat, "*Nouveaux Mélanges Asiatiques*," 239. Schafarik, *Slavische Alterthümer*, 1,350.

Dionysius Periegetes is the first western writer who mentions the Alani; he places them in the grassy steppe north of the Mæotis. Josephus, A.D. 35, says that having been asked by Tibe-

rius to invade Parthia, they broke through Armenia and Media. He mentions a second expedition into Media in A.D. 72, and says expressly they then lived on the Tanais and the Mæotis. Pliny, writing about the same time as Josephus, places the Alans in the same neighbourhood. Moses of Chorene says, that about the year A.D. 90 Artakes married an Alan princess, and that many Alani then settled in Armenia. Ælius Spartianus mentions the Alani and Sarmati together on the Danube as invading Mæsia, in the time of Hadrian. Ptolemy places some of his Alani in the Waldai mountains, which he calls the Alan Mountains. As I have said, he also places an Alannius Mons and Alanni Scythæ beyond the Imaus and about the little Altai mountains. Marcian of Heraklea, who wrote about A.D. 400, also places some Alani near the Waldai mountains. He says the Borysthenes and the Rhodon, *i. e.*, the Dwina, spring from the Alanian mountains, and that the Alani dwelt there. The Peutingerian Tables also mention the Alanian mountains as the source of some great river flowing into the Mæotis, which it is doubtful whether it be the Don, the Dnieper, or the Volga (Schafarik, 1,352). We thus find the European Alani at an early date in three different situations: 1st, on the Don and the Mæotis; 2nd, between the lower Danube and the Dnieper; 3rd, in the north of Russia and among the Waldai mountains. Their most ancient seats were doubtless the steppe between the Don and the Volga, where they are placed by Pliny and Dionysius Periegetes, where they were in close contact with the Roxolani, which Schafarik makes out to be a compound of Alani and Raxa or Rōxa, a corruption of Rha, the name of the Volga. Hence they spread widely through the ancient Sarmatia. Between 180 and 215, one body of them were associated with the Goths, with whom they are mentioned by Procopius at a later date. Another body joined the Vandals, who in 275 left the banks of the Oder and invaded Dacia. When these latter were driven out of Pannonia by the Goths in 333, the Alans accompanied them into the west, a portion of them settled in Gaul, and from them the city of Alençon is said to take its name, others passed into Spain and even Africa. (See authorities in Zeus, 705.) Like the other barbarous tribes of central and eastern Europe, the Alani were conquered by the Huns, and were dragged by them into many remote corners of Europe.

But we must revert. These various sporadic Alans were speedily assimilated by the more numerous races in whose company they marched. Not so the Alani further east. It is in the neighbourhood of the Caucasus that their name became most famous. Caucasigenas Alanos is the appellative given them by Sidonius Apollinaris. We have mentioned Josephus and Moses

of Chorene, who both place them there, but the list of authors is by no means so limited. Suetonius places them in this neighbourhood in the reign of Tiberius. In the reign of Hadrian they plundered the Roman possessions in Asia, and a prefect of Kappadocia wrote a work on the tactics to be employed against them. (Schafarik, 1,353.) The eastern Alans were among the earliest conquests of the Huns, and remained their faithful subjects as long as their empire lasted. After its decay, Procopius places them in the Eastern Caucasus. I have followed up their later history of the Alans in the earlier part of this paper where I have identified these Caucasian Alans with the Lesghs, and it now remains to describe in some detail the various tribes that we have identified as having formerly composed the Alan confederacy, our excuse being the general obscurity of the whole subject and the general inaccessibility of reliable information about these interesting tribes. To begin with, the whole of these tribes are mountaineers, the lowlands by the Caspian, the Terek, etc., have long been occupied by the Kumiks and other Turks. Again, it seems very clear that some of them, for instance the Mitsdjeghi, have been driven much further into the mountains within recent times. The Ossetes have notably encroached upon them, they themselves having been pushed on by the Circassians and Turks.

Klaproth tells us, in his "Voyage au Caucase," 2,379, that they formerly lived in the two Kabardahs, and that before the days of Batu Khan and the Mongols their seats extended to the Don, A.D. 439. At present, the Mitsdjeghi or Kists are bounded by the so-called Lesghians, the Caucasus, the Sundja, and the upper Terek. Among them the most renowned for their habits of rapine are the Tchetchentses, who live in the country watered by the Ghikha, the Farthan, the Argun, and Djalk. They have been found very troublesome neighbours by the Russians, and Klaproth tells us that on their account the couriers who travelled in the early part of the century from Mozdok to Vladikaukas had to be protected by an escort of a hundred and fifty men and two cannons. They lie in wait in the woods by the river side, whence they pounce upon unwary travellers, kill their escorts, if any, put gags in their mouths, and bladders under their arms, and then putting cords with sliding knots round their necks they throw them into the river. To escape strangling the unfortunates seize the rope and are dragged across by swimmers. They seldom kill their prisoners, but treat them with great cruelty, and extort heavy ransoms for them. They are governed by princes and nobles. West of the Tchetchentses is the district of Karabulak. The name is Turkish and means black country; the Circassians call it Balsu. The Tchetchentses

call it Arish Tojai, while its inhabitants, the Karabulaks, give it the name of Arshte. They occupy the fertile valleys of Chelmigor. (This name is wonderfully like Cholmogorod, the old capital of Biarmia) and of the nearer Farthan. They were agriculturists and appear to have been formerly Mahometans, for they still place on their tombs statues surmounted with turbans. Now they have no definite religion, but follow the superstitious practices of the other Caucasians. They are very moderate in their appetites, a fragment of millet bread and a little cheese sufficing them for a meal. Carrying provisions for six months, a gun, a lance, a sword, a dagger, and a small round shield, they penetrate the mountains, either for hunting or plunder. They have no princes, but in their war expeditions are led by their elders. They are enemies of the Russians. (Klaproth's "Tableau", etc., 64, and Guldenstadt, "Beschreibung der Kaukasischen Länder", 154.)

The Ingushes are the most westernly of all the Mitsdjeghi. They call themselves Lamur or mountaineers, and are also known as Gulgui or Halha. Klaproth divides them into seven tribes, the Ferguncha, Agi, Cham-hoi-y, Charati, Zinkai bach, Ge ula wy and Wapi, but by the Russians and others they are divided into Great Ingushes and the Inner Ingushes. The former are also called Starye Inguschi, that is old Ingushes. "The road to the valley of the Great Ingushes leads over woody hills at first for a few versts on the right and afterwards on the left bank of the Kumbalei, the pass about eighty fathoms broad and six versts in length; it is everywhere level, passable for carriages, and has some wood. On both sides are high steep wooded hills, on whose summit grows a beautiful red wood, the taxus or yew. At the extremity of the pass is a stone image fixed upon a rock, to which they pray and offer sacrifice. Here opens the valley of the Great Ingushes, which runs south-east above six versts by four broad. Most of the villages are situated on the north side of the valley, partly on the declivity of the hill and partly on the river. On the west side of the rivulet Gerge also lie some detached villages. The valley itself is level, and furnishes sufficient pasturage for the cattle of the inhabitants. The arable lands of the Great Ingushes lie chiefly on the southern declivity of the northern range of hills, and they keep their sheep on the southern and eastern woody chain. At the foot of the western hills is the village of Wapi, on a brook called by the Ossetes, Makaldon, which falls into the right of the Terek, midway between Balta and Lars. The Kumbalei issues from the eastern hills in two arms, on the right side of which runs the road to the valley of the River Assai and the Inner Ingushes. Proceeding still higher from the

sources of the Kumbalei and crossing the hills which separate it from the valley of Assai or Shadgis, you come, not far from it, to a place called Galga, which is considered as the original home of the Ingushes. From this spot a toilsome road leads over a miserable bridge to the right bank of the Assai. Not far from a sacred rock upon which the Ingushes, from motives of piety, throw horns of animals, and sticks, is a second bridge conducting to the left bank. Places where similar offerings are made occur at many of the dangerous passes in the mountains. Ten versts further south is another rugged pass, and to the south-west of this pass opens the extensive valley of the Ingushes, who call themselves Schalcha. On the west side before you enter it is a cavern with an iron cross in the middle of a steep rock, to which a general pilgrimage is made in June. On the rock are to be seen traces of former habitations. The valley is large, uneven, and inhabited along the side of the hills. A colony of these Schalcha Ingushes settled, about 1770, at the foot of the hills on the Kumbalei. Their increased population, in valleys of no great fertility, compelled them to remove to the plain. This colony, on account of its valour and numbers, was able to make an effectual stand against the Kabardian princes. On the left bank of the Kumbalei, just at the foot of the hills, reside about two hundred families. The other villages are situated in the plain. This description of the country of the Mitsdjeghi I have extracted almost *verbatim* from Klaproth's travels. I shall now give from the same source a *résumé* of the manners and customs of these obscure tribes.

These people may be termed wealthy in comparison to other mountaineers, for they have abundance of cattle and bread-corn, and yet live very moderately. For every repast they bake small cakes of flour, oat or barley meal. The dough is formed into the requisite shape, laid upon a round stone, and, when it is half baked, covered with hot ashes till it is done. It is slack-baked and heavy, but easily digested by the moderate stomachs of the Ingushes. They also brew, like the Ossetes, an excellent kind of beer, resembling porter, for extraordinary occasions. They dress in the same fashion as the other Caucasians, but their apparel and arms are of better quality. They alone of all their neighbours have retained the use of the shield. These shields are of wood, covered with leather, and strengthened with oval iron bands. Their short knotty spear is not only used for defence, but when the point is thrust into the ground the forks serve as a support for the gun, and thus enable them to take a surer aim. They fight most commonly on horseback, contrary to the practice of the mountaineers, and employ the shield with admirable dexterity. A contumelious epithet is considered by

them as the greatest insult, and is often expiated with life itself. In their rencounters you would expect most of them to be dangerously wounded at least, but they parry the strokes of sabres with such address that very few receive the slightest injury. On the most trivial occasion they seize the sabre, but have recourse to firearms only in cases of the utmost necessity, as to revenge blood or to repel enemies. The social connexion is kept up among the people by the elders, who are distinguished by their wealth or the consequence of their families; but they possess greater influence over the lower classes in the plain than in the mountains, where the universal indigence places all ranks more nearly upon a level. The habitations of the Ingushes in the plain are miserable wooden huts, which they forsake when attacked because they are without towers. They maintain the closest family connection with those in the mountains, and are the more solicitous to be upon friendly terms with them, that they may obtain an asylum among them in case of necessity. When they remove to the plain, they let the lands and houses which they leave behind in the mountains to their relatives, or give them in fee to poorer persons, who thus become their vassals.

Every family has its watermill, which is portable. A small millstone is turned round rapidly by the axle of the little horizontal wheel against which the water is discharged in a very obtuse angle from a hollow tree or gutter. The funnel-shaped hopper of birch bark is suspended by four cords, and is shaken, when needful, by a stick which is fastened to it and touches the stone. A sharp-pointed stone moving in the cavity of another serves instead of an iron puntle to the axletree, and the stone is raised or lowered by means of a forked stake and a stone placed underneath it. The whole machine is made without iron. Their fields are surrounded with stones, and the Ingushes are so anxious to convert every spot of land to the purposes of agriculture, that they grudge even the space for paths, and, for the sake of a foot of land, whole families often exterminate one another. They are constantly employed in removing from their fields the stones that have rolled down from the hills upon them, in cutting new channels for irrigation, and in improving barren soils. The straw of wheat never grows here above a foot long, but the ears are long and heavy. The Ingushes are industrious, especially the women, who not only attend to the domestic concerns, but make clothes for their husbands, fetch home firewood frequently from the distance of eight versts, and carry very heavy burdens over the hills. Almost all the elevated valleys are destitute of wood, which must be brought with great labour from the lofty mountains. This, as I should suppose, is

the chief reason that their houses are built of stone, with flat roofs. They whitewash the exterior of their buildings and towers, though they are not very tenacious of cleanliness within.

They build together in families, and often fortify their villages with walls and conical towers from sixty to ninety feet in height. Their fields lie contiguous to their habitations. The animals which they keep are hogs, sheep, asses, mules, a few horses, and horned cattle, for the deficiency of pasturage admits of a small number only of the latter. For the rest, their wants are few. Wretchedly clad in the Tartar fashion, wrapped, winter and summer, in felt cloaks, they have often no other food than raw roots, and are nevertheless very temperate when the chase affords them better cheer. The oldest persons of the family sit down first to their repast, and leave those who follow them so much that enough remains, after they have done, for the children. In the observance of the rites of hospitality, in the possession of their property in common, in the equitable division of what fortune or accident throws in their way, they lose the appearance of savage life, and seem actuated by more humane sentiments than we rapacious Europeans who style ourselves polished and civilised. They are very meagre, but well grown, swift of foot, strong and indefatigable. Freedom, wildness, and gravity, are expressed in their looks. In temper they are violent, but soon pacified again, and all their passions are displayed without disguise or restraint. They consider the contempt of life as a virtue, and the slightest symptom of fear as the greatest of faults, for which reason they choose rather to lay violent hands on themselves than to submit to the will of another. Their women show the same heroic firmness, of which the following instance came to the knowledge of Count John Potocki during his residence on the line:—

An Ingusch carried a young female of his own country to Eudery with the intention of selling her. A Jew from Schirwan offered two hundred and forty rubles in Persian stuffs for her, and the bargain was concluded. The buyer and seller withdrew for a moment to look at the goods, on which the girl thus addressed the bystanders: "I am but a poor orphan, whom any one may abuse with impunity. My conductor promised me marriage, and now he is selling me, that he may have silk clothes. But I will take care that he never shall wear them." With these words she went out into the garden and hung herself upon a tree. Hunting, war, and marauding, are deemed by the Ingushes the most reputable employments of youth, and they rob as much for the sake of honour as from necessity.

In all their transactions they are governed solely by ancient

custom. The father arms his son as soon as he is able to defend himself, and then abandons him to his fate and his inclinations. The Ingusches borrow their names from animals, thus: one is named Ust, ox; a second Chaka, hog; a third Poe, dog; and so forth. The women have still more singular appellations, for instance: Assir Wachara, she who rides a calf; Ossiali Wachara, she who rides a bitch, etc. Should an Ingusch be indebted to an individual belonging to any of the neighbouring tribes and not pay him, the creditor goes to his kunack, or guest, among the Ingusches, acquaints him with the circumstance, and solicits him to procure the payment of the debt, with this threat: "If thou dost not comply, I have brought with me a dog which I will kill upon the graves of thy family." Every Ingusch trembles at this dreadful menace, and if the debtor denies the debt, he is obliged to swear that he does not owe it. On this occasion dogs' bones are mixed with the excrements of the same animals, and carried to the sacred rock, Jerda. Here the person charged with the debt says with a loud voice, "If I deny the truth, may the dead of my family carry upon their shoulders the dead of the family of my accuser, and that too on this road when it has rained and the sun scorches!" The same ceremony takes place in charges of theft, for the Ingusches steal oftener than they lend. If a man's son dies, another who has lost his daughter goes to the father and says, "Thy son will want a wife in the other world; I will give him my daughter; pay me the price of the bride." Such a demand is never refused, even though the purchase of the bride amount to thirty cows. They take five and more wives, and after the father's death the eldest son marries them all except his own mother, whom, however, any of his brothers may take on the same footing. When this scandalous custom is reprobated in the presence of an Ingusch, he replies: "My father lay with my mother, and why should not I lie with his wife?" The women of the Kists and Ingusches are small, strong, and tolerably handsome; the girls, adorned with the glow of health, are very lively, inquisitive and merry creatures. Their hair in front is cut so short as to cover only half the forehead, over which they spread it with great care, making it adhere together with white-lead. That on the hinder part of the head they plait in several braids, which fall over the shoulders and down the back; but married women have it done up in two braids only, each being tied with a silk, woollen or cotton fillet, which is passed round it so often that it is an inch thick near the head, and diminishes to the other extremity, which just reaches to the top of the shift, where both are tied together with a ribband. The rest of the headdress consists of a Tscherkessian hat, which looks very

well before, and brass, copper or glass earrings. The shift is worked at the shoulders and breast, with silk, wool or yarn of different colours, to the depth of five inches. Over it they wear a jacket which reaches to the waist, and is fastened with a girdle, and under the shift long trousers. These trousers mark their condition: married women wear red, widows and old women blue, and young unmarried females white trousers, but all of them are neatly worked at the ankles in a variety of colours bordered with black. In winter, females of all classes wear boots, and in summer go barefoot. When their household business is finished, they employ themselves in making carpets, or felts. They manufacture also a slight woollen stuff (*zoka*), which serves to clothe themselves as well as their husbands and children. Their method of dancing seems peculiar to themselves, as it is not to be met with among the other inhabitants of the Caucasus. A party sitting down in a large circle sing, and, accompanied by hautboys or bagpipes, challenge the youngest and ablest dancers to show their activity. Such as choose then throw themselves into a variety of dangerous postures, and perform all sorts of antics, one after another. When all the dancers have taken their turn, amidst loud and general plaudits, they join hands, sing and dance in long files. They frequently form, with great dexterity, in one large circle, open and close again, and conclude with the same dangerous antics with which they began. That the fair sex may not be deprived of this diversion, they seek some blind musician with whom they may amuse themselves in some spot at a distance from the men, without violating the custom which enjoins them to conceal their persons from strangers of the other sex. The art of writing is considered by the Ingushes as a miracle wrought by the Christian and Mohammedan religions in favour of their professors; they nevertheless continue averse to those religions, though the Russian missionaries employed by the Ossetian commission took great pains to convert them to the Greek church. Two brothers of this nation were sold as slaves to the Turks, embraced the Mohammedan faith, visited Mecca, and at length recovered their liberty. Returning to their native land, they found their mother yet alive, and having converted her, began to preach with pious zeal against the veneration paid by their countrymen to rocks.

"Ye preach a doctrine," said the Ingushes to them, "which ye learned while slaves, we'll have nothing to do with it; therefore begone, and never show your faces here again." The two brothers withdrew unmolested to another country, a proof that the religion of the Ingushes is far more tolerant than the Christian.

The religion of the Ingushes is extremely simple, for they worship one God, whom they name Däle, but no saints or other illustrious persons. They celebrate Sunday, not by religious worship but by rest from labour. In spring they observe a long fast, and in summer one of shorter duration. They have no particular customs either at the birth or death of man, but annually perform general pilgrimages to holy places, most of which are remains of Christian churches erected in the time of the celebrated Georgian queen Tamar, who reigned from A.D. 1171 to 1198, subdued most of the Caucasians, and converted them to Greek christianity. On such occasions they make offerings of sheep, beer, and other things. An old man of known sanctity, whom they term Zanim stag, or pure man, who is their only priest, and unmarried, has alone the right to offer sacrifices and prayers at the holy places. A festival of this kind is celebrated with a general feast upon the animals sacrificed. Of Christianity they retain nothing but a veneration for ancient churches and a contempt for the Mohammedan religion. Those who resided nearest to the plain of the Kabardah suffered themselves to be baptised in the time of the Russian missionaries, but since the suppression of the Ossetian commission this has totally ceased. The Great Ingushes are much more hospitable and sociable with strangers than those residing on the Assei, and have borrowed their manners and customs from the Ossetes and Tscherkessians. At entertainments the host always waits upon his guests, and eats only what the latter throw to him. He sets before them the head and breast at once; of these each is expected to partake, but the ears are allotted to the boy to remind him of the duty of obedience. After eating the flesh they drink the broth. They squat round in a circle to the repast, at which they use nothing but their fingers. Their burial-places are vaults of masonry above ground, with a small aperture on the west side by which the corpse is introduced; it is afterwards closed with stones, and the women fasten to it the braids of their hair. For persons killed by lightning, they erect poles, to which they attach the head and extended skin of a goat. Respecting the time of their settlement in the country which they now inhabit they are totally ignorant; but the ruined church on the northern hills, at which those offer sacrifice who do not go on pilgrimage to that just described, evinces a pretty high antiquity. Their flocks and herds are considerable, and they have a good breed of horses. The more opulent let their cattle, and find this method both safer and more advantageous. Ten sheep with ten lambs yield every three years a profit of eight head, so that the owner must receive back twenty-eight head. Should the farmer have the misfortune to lose the sheep,

he pays a cow every three years in their stead, till he can return the proper number. For a cow with a calf a sheep is annually given; and for a mare a cow, together with half the foals she drops; or in ten years three sheep, the mare with foal, and half the foals dropped during that time. This practice has the authority of a tacit law among these people. For a certain tribute, also, they take the indigent and the defenceless under their protection. They observe the great fasts of the Greek church, but that is the extent of their knowledge of Christianity. On these occasions they perform their pilgrimages to the holy places, and after harvest to the cavern with the iron cross. They relate many extraordinary stories concerning these sanctuaries, and, among the rest, of a vault in the valley of Schalcha, which is built of stone. Here a passage is said to lead through nine doors to a cavern, where large books, a gold candlestick, a chest full of valuables, and a man and woman are preserved sound and uninjured.

Having thus described the manners, etc. of the Mitzdjeghi, the types of the ancients Alans, we may now pass in review some of the other tribes of the Eastern Caucasus, who belong, as I contend, to the same stock, but have been more or less corrupted, and who are generally classed as Lesghs.

The most important tribe among the Lesghs, that which has won for itself the widest renown for its culture and independence, is that of the Kubetschi. It is fortunate that Fræhn, one of the most eminent members of the St. Petersburg Academy, has collected for us from his stores of Arabic and Oriental writers a mass of information about them, and published it in two papers, from which I shall quote very largely. (See Fræhn in the "Bulletin of the St. Petersburg Academy," 4, 3.) He tells us they live fifteen versts north-westwards of Derbend, about the sources of the Ulutschai Barschlitschai and Hanirasen, and in the mountains of the Kaitaks. They number about 1,200 families. They call themselves Sirhgeran. Both names mean makers of chain mail, Kübe in Tartar is a coat of mail, and kubedschi or kubetschi (as the name is written in Derbend), Turkish dschebedshi, is a maker of mail, a sword smith or armourer. Sirh in Persian, and probably also in Ossetic, is a coat of mail; Sirhgeran or Sirihgar a maker of coats of mail, and of this Sirhgeran is the plural. As I have previously said, I identify this name with Scirri, the latter being merely a corrupted form of the former.

I shall now again quote from Fræhn. History speaks of the Sirhgeran as early as the reign of the Sassanide Anurschirvan in the sixth century, when he broke through the Caucasus at the gate of Derbend, and made the small princes of its neighbourhood tributaries. When the Arabs carried their expeditions as

far as the Caucasus, about the eighth century, we meet with the Sirhgeran among the peoples who submitted to them and paid them an annual tribute. Belasory, towards the end of the ninth century, and Maçoudi in the middle of the tenth, are the oldest Arab authors who mention them. After them they are named by Abu Hamid Andalusey, 1160 A.D.; Jakut, 1229; Kazwiny, 1285; Ibn-el-Wardi, 1318; Bakuroy, 1403; Scherif of Iesd, 1424; Haddschy Khalfa, 1648, etc. This list of authors, going back to the ninth century, effectually disposes of the absurd notions of some of the ethnologists of the last century, who would connect the Kubetschi with Western peoples, and even make them a Genoese colony, because they happen to be an exceedingly able nation of craftsmen.

From these Arabic authors, Fræhn has extracted his chief facts. They tell us, then, that the Sirhgeran were a tall ruddy race, with small bright eyes. That they were very expert in the manufacture of coats of mail, stirrups, bits, swords and other iron war furniture. They confined themselves to this kind of work. They were wealthy and hospitable, and welcomed heartily all strangers who understood a handcraft, an art or science, or who could write.

Through the inaccessibility of their country, they had been able to maintain their independence against the surrounding tribes. Maçoudi says, that a portion of them were Mahometans, another portion Jews, another Christians, but as Fræhn says, it cannot be doubted that they also knew something of Parsism. At least in this way only can the observation of Kazwiny be explained. Speaking of their dead, he says: "In each of the two villages inhabited by the Sirhgerans, they have for each family a separate great underground apartment, in which they cut the corpse in pieces. Cut off the flesh from the bones, and put the latter in a sack, on which they write the name of the defunct, the year of his birth and death, and the name of his father. The flesh, however, and the entrails they divide into two portions for the two families of the deceased, to be scattered among the hills outside the villages, where they leave them for the ravens and vultures to devour." The iron and steel work of this folk is also mentioned in the history of Timur. When he returned from Kiptchak, in 1396, after conquering Toctamish, a deputation from the Sirhgeran came to him who presented him with several coats of chain mail, etc.

We have said that Kubetschi and Sirhgeran are the same name. In the Derbend Nameh of Risalet el intifar the identity of the two names is noticed, Kubetschi being mentioned as the later form. The Western writers who were introduced to the Sirhgeran through the medium of the Turks, use, I believe, invariably

the name Kubetschi. They furnish many interesting particulars about them. In writing, they use the Arabic alphabet. Brackel was told by them that they had a great book in which their laws were written; he supposes it was composed in their language, but writ in Tatar (*i.e.* Arabic *sic*) letters; the Kubetschi whom Potocki saw in 1797, were of a good figure, the expression of their faces open and confident, and very different from those seen by the count among other Caucasians. Notwithstanding that they are dependent on the Usmei of the Kaitaks and the Russians, they have a free constitution which is represented by one traveller as democratic, by another as aristocratic. The people choose twelve elders, who according to Garber hold office for a year, while Reineggs makes them hold it for life. According to Grabsch, they have a council of twenty-four members, in which three of the eldest preside, who are elected annually. According to Brackel they have ten (?) elders, whose office is hereditary, and these choose out of twenty-five families as many judges. From the decisions of these judges, there is an appeal to the council of ten. Lastly, Gamba assigns to the two divisions, into which he divides the Kubetschi, a kind of monarchical government, and places at their head an elective prince, to whom however they pay no tribute. Maçoudi, as I have said, tells us the Kubetschi were formerly Christians. The Kubetschi themselves have a tradition to the same effect; but there is great discrepancy as to the date, some put it three hundred years ago, and others six hundred years. As proofs that they were formerly Christians, may be cited the fact that there still exist among them three buildings which were formerly churches. On the door of one of these buildings Grabsch saw an inscription, which neither he nor any of the inhabitants of the place could read. Out of one of the churches built of free-stone ornamented with carved work, one of the chief men had made a mansion five stories high. On the stones of this building the Christian brothers of Sarepta (who are, I believe, a Moravian colony) had also noticed unknown inscriptions. The Kubetschi are now all Mahometan Sunnites. According to Klaproth they adopted Mahomedanism in 1457, Brackel says, before the days of Timur, and when Malmed Khan reigned at Derbend. (Fræhn suggests that this Mahmed Khan was the seventh of the Persian Ilkhans, well known for his zeal in spreading Islamism. But as I have said, Maçoudi, in the tenth century already mentions that there were Mahometans among the Kubetschi, and after their general conversion it is supposed that some remained Christians. The Armenian Kalustof mentions that there still lived among the Kubetschi in his day a Christian Kubetschian. Klaproth tells us there are twelve mosques in the Kubetschi country, and Reineggs says, the Kubetschi are to be distinguished from other

Mahometans. They do not employ circumcision. They prohibit the use of swine's flesh, but not wine. Polygamy is not established among them, although a man may when he likes separate from his wife and take another; but he goes on to say, it is not with them as with the other Mahometans, the husband, but the wife who makes the bridal present, a custom probably derived from Christian or Jewish practice. The women's apartments among the Kubetschi are open, and they mix freely with the men. Although warlike and brave, these mountaineers differ from the other Lesghs, in that they do not take part in robber expeditions, nor are they much engaged in cattle breeding or agriculture. They are still what they were in ancient times, renowned smiths and armourers. The armour, guns, swords, which they make are in great request in the Caucasus and Persia. They are also skilled in gold and silver work, and their wives embroider in gold and silver, and they have also struck decent coins in imitation of the Russian ones, and weave carpets and cloth which are in use far and wide. Klaproth says, their handiwork both in metal and cloth is known as Koubitchi-chal ("Tableau Historique du Caucase," 62) and so important is their craft considered, that their country has been generally treated as neutral ground by the surrounding chiefs, who have often found an asylum there. There was a general impression among the travellers of the end of the last century and the beginning of this, that the Kubetschi are descended from a Genoese colony, and that they preserve the language and art culture of those enterprising merchants, but the whole story is false. The Kubetschi language is a dialect of the Lesgh, and nothing has been found in this language which shews any analogy with Greek, Italian or German, while their fame in the arts was known long before that of the Genoese. Klaproth divides the Kubetschi into three sections, which he names Madschar, Kunah and Kachlatsch; the first seems to have some connection with the ruined town of Madschar north of Caucasus. Potacki mentions eight of their towns, viz. Suterkalla, *Seralla*, Hunnu-kalla, Chodetsalla, Kunnivalla, Urivall and Nachkalla. In General Chatow's map of Georgia, the following names occur within the limits of Kubetchia, namely *Surartschi*, Tchiozili, Annuzga and Urgali. Brachel mentions *Surarkilly*, Schirilly and Annisgally. Several of these names enable us to identify the ancient city of Sirir in one of the provincial towns of the Kubetschi. Sirir means the throne. It was situate two parasangs distance from Semender (the modern "Tarku, see Von Hammer's, Golden Horde," 8). It is called Seriral Allan or the throne of the Alans, in the Menasirul Awalim of Aaschik (*vide id.* 433). The Moschterich names three places of the name Sirir, one of which comprised a large area between Arran and the iron gates. Ibn Said

mentions it as a town in the mountain of the Kaitaks. Speaking the same dialect as the Kubetschi, and like them in every respect except in their artistic culture, are the Akusches, also subject more or less to the Usmei of the Kaitaks. Klaproth describes them as forming a republic of about thirty villages, situated about the sources of the Torkali, the Manas, and the H'aury. The principal village has the name of Akuscha, it has 1000 inhabitants. They have neither princes nor nobles. Each one of the twelve tribes or butta has its elder, who bears the title of darga, and who is charged with the administration, but he has no authority and is only a kind of chief adviser. If a neighbouring prince wishes for some mercenaries from Akuscha, he has to send a commissioner to each butta or tribe. They offer their services to who ever will pay best, and fight against any who will not pay them, except against the *Schamkal of Tarku who was formerly their sovereign*. As their country is very rugged, the latter prince allows them to pasture their cattle in his rich pastures. The Akusches are Sunnite Mahomedans. They chiefly live on the produce of their flocks, and do not till the ground much. Their wool is excellent and they make it into cloth, which is widely celebrated in the Caucasus, (The foregoing facts are from Klaproth, "Tableau Historique etc., du Caucase," 60.) The Arkushes number 1000 families. They are bounded on the north and east by Turkish tribes, on the south by the Kaze-kumuks, and on the west by the Avarian Lesghs. Guldenstadt names thirty-three of their villages.

I have said that both the Kubetschi and Akuschi are more or less subject to the Kaitaks and Kara Kaitaks. The latter names are curious. When the empire of Kara Kitai was in the height of its prosperity in the twelfth century, De Guignes tells us that its ruler made an expedition, which like the Mongol army at a later date traversed the Caucasus and made the round of the Caspian on its return home again to the country east of Turkestan. The Kara Kitai were a race of Turks governed by a dynasty of Kitai princes who had been expelled from China. De Guignes goes on to say that a remnant of them were left in the Caucasus, where they founded the kingdom of the Kaitaks and Kara Kaitaks.

There is something improbable in the story. The name Kaitak is much older in the Caucasus than the twelfth century, for Maçoudi and Ibn Haukal both mention it in the tenth. The Kaitak commonalty speak a Lesghian tongue; their princes speak Turkish. There is some confusion, too, in the use of the name. The inhabitants of Northern Daghestan, whose capital is Tarku, and who are subject to the Schamkal are now Turks, but the Turks are, as is well known, an intrusive race into this

area and that very recently; and this area was originally the seat of the Kaitak power. Maçoudi places them north of Derbend, and tells us their capital was Semender, the same town which is now called Tarku, which was once the capital of the Khazars, but the latter had moved the metropolis to Itel when Semender was captured by Selman, son of Rabiât. The prince of the Kaitaks was a relative and vassal of the Khan of the Khazars, and like him professed Judaism (Ibn Haukal), but Maçoudi, who wrote thirty years earlier, says the then ruler of the Kaitaks, *i. e.*, in A.D. 943 was a Mussulman. He was considered to be an Arab and to be descended from Cahtan. He was entitled, says Macudi Selifan, a name which he says if he were not mistaken was borne by all the kings of the Kaitaks. There were then no other Mussulmans in the country except himself, his son, and wife. Both these accounts are probably true when Maçoudi wrote, the Khazars had been defeated by Selman, the son of Rabiât, and had apparently placed a Mussulman and an Arab on the Kaitak throne. Thirty years later this intruder was ousted and a native prince again placed on the throne, under the patronage of the then all powerful Khazar. The title Selifan which Maçoudi gives to the chief of the Kaitaks is probably a corruption of that of Schemkal or Scheffkal. Semender is described by Ibn Haukal as a large city, whose environs were planted with vineyards and orchards, four thousand in all. Its population was composed of Mahometans, Christians, and Jews, who had there their mosques, their churches, and synagogues. Their houses, made of wood, of a considerable size, were shaped like the huts of the nomades, with high roofs. The inhabitants of Khaidak often attacked the inhabitants of Derbend. (See Maçoudi and Ibn Haukal, in D'Ohsson, *les Peuples du Caucase*," 21). As I have said, the Khaitaks proper, *i. e.*, the Lesghian Kaitaks, no longer hold sway at Tarku, they have been driven thence by the Turks, and the subjects of the Schamkal are Kumiks and other Turkish tribes. The Khaitaks proper now live to the south of the territory of the Schamkal, from which they are separated by the Ouroussai boulaq. On the west they are bounded by the mountains of the Kazikumuks, on the east by the sea, and on the south by the river Darbakh, which separates them from Derbend and Tabasseran. Their country is watered by the Hornwry ozen and the Great Bouam. They consist of two tribes, the Kaitak and Karakaitak, who live on the left of the Darbakh. The borders of the sea are occupied by certain Turcoman nomades, and between the mouth of the Bouam and that of the Darbakh by another tribe of the same people who take their names from Bérégœ, their principal town. The title of Ouzmei is hereditary, the one who reigned when

Klaproth wrote was called Mama or Mahomet. He submitted to Russia in 1799, received the title of Councillor of State, and a stipend of two thousand silver roubles. He resided ordinarily at Barchly or Bachly, a considerable town, which with the surrounding villages contained one thousand two hundred families. He dwelt there in a vast brick palace, placed in a beautiful court surrounded with a high wall. South of Bachly was Midgalis, on the right of Bonam, the environs of which produce capital grapes; but the inhabitants are not skilful in making wine. They allow half the juice to evaporate before fermenting it, and then mix the wine with rose water. They also prepare a kind of grape conserve called douchat, which has the consistency of syrup, and which is eaten with bread. The owners of the vineyards being Mahomedans will not make wine, and sell their produce to the Jews and Christians. When the wine is made the Mahometans will buy it and drink it, although their conscience rises against fermenting or pressing out the juice. Kaia-kend, or the castle of the rocks, celebrated in the traditions of the Kaitaks, is situated on the Hornury ozen, nearly three leagues from the sea. The chief town of the Kara Kaitaks is Kara Gourich, situated on a stream running south into the Darbakh. They are partly Jews and partly Sunnite Mahometans.

In the introduction to Klaproth's account of his journey to the Caucasus, he tells us that the Arabs, when they invaded the Caucasus, gave the name of Kumuks to the tribes north of Derbend, and divided them into Kazi Kumuks, or believing Kumuks, and the Kafir Kumuks, or unbelieving Kumuks.

The province of Tarku is still called Kumuk, and its inhabitants, the subjects of the Schamkal, are called Kumuks, but they now speak Turkish, being probably descended from some of the Coman or Petcheneg tribes. When the Arabs first appeared in the Caucasus no Turks had crossed the Volga, as we have previously shewn. The word Kumuk was then applied to a non-Turkish race. We have already said that the Kaitaks were formerly the subjects of the Schamkal, and had their seats at Tarku. So that it would seem that the Arabs applied the term Kumuk to those otherwise called Kaitaks.

The name Kazi Kumuks survives—that of Kafir Kumuks has disappeared. I believe that the Lesghian Kaitaks now represent them. It is certain that the Lesghian Kaitaks now speak the same language as the Kazi Kumuks, and it is only thus that I can reconcile the various accounts of them. I shall now treat briefly of the Kazi Kumuks. Their territory, according to Klaproth, extends along the eastern branch of the River Koisu. They are zealous Mahometans of the sunnite rite—they

are great herdsmen and also agriculturists. They are governed by a prince entitled the Khanboutai Khan, who also bears the title of Sourkhai. He can put more than six thousand men in the field. He also has authority in the district of Tchilih. His villages number one hundred, and he lives in a large town of four hundred houses, called, *par excellence*, Chabar, or "The town." (Klaproth "Tableau Historique, etc., du Caucase", 60.) Bastian, in the "Zeitschrift für Ethnologie", iii, 128, tells us that the prince of the Kumuks, who converted the Kazi Kumuks to the true faith, was called *Alan Shah*. This was probably at the time when the Kumuks were still Lesghs. I have said that the Kumuks resemble the Mitsgegghi very much in their language. It is curious that Jac. Stœhlin actually identifies them with the latter. His words are, "The territory of the Goumicks or Tchetchengues is bounded on the west by the river Souncha, which separates them from Little Kabardah; on the north by the Terek and on the east by the Aksai, and this somewhat agrees with the early Arabians, who tell us the mountainous country of the Goumicks is situated to the west of the Khaidak. It was inhabited by Christians, subject to small chiefs but having no common king. It is impossible with our present materials to unravel these contradictory accounts.

Guldenstadt tells us that the Kazi Kumuks were governed, when he travelled among them, by a prince styled the Kazi Kumuk Khan. The one who was then living was named Muhamet Khan, who was preceded by Surchai Khan (this differs from Klaproth's account). Surchai was preceded by Muhamet, who took part in Peter the Great's war against Persia. The same author gives a long list of Kazi Kumuk villages. (See *op. cit.* 167).

There still remain the Lesghian tribes, who have won for themselves the greatest fame in our day as the followers of Schamyl, and who have proved the most persistent foes of Russian aggression, the Avars and their neighbours the Andi and Dido; but this paper has already outstripped the limits of former ones, and very probably of your patience, and I will reserve what I have to say about them till I come to speak of the Huns. I am very sensible of its imperfections. Those who know anything of the Caucasus will know the extreme difficulty of an inquiry into this particular region and will excuse them. Our materials are scanty and very unsatisfactory. Any further information about these tribes which may be sent to me shall be made good use of and thankfully acknowledged. Meanwhile I hope that this survey of them may contain a good deal of matter new to English readers, and assist in some measure future inquiries in the same field.

DISCUSSION.

Mr. E. RANSOM said that he had heard Mr. Howorth's paper, but with less interest than he expected. His massive quotations from Klaproth he (Mr. Ransom) had read in Klaproth's book before going to Daghestan. The latter made even wayside blunders of names and positions—not to be wondered at seeing how difficult it is to be absolutely exact, even now that the country has been mapped. Klaproth, though a better observer and commentator than most recent travellers, was a cumbersome writer, and his conjectures were generally idle. He went wide afield, and all he wrote has not yet been checked. The recent exposure of his Central Asia Map made one rather doubtful of his authority. A man must gather a very strong array of notes on the spot before he can form any idea of the history of those peoples. He could hardly imagine the student being helped, materially at any rate, by writers of former days whose allusions to countries they themselves had not seen were necessarily most uncircumstantial. If two observant anthropologists were to spend three months in East Caucasus with General Uzar's map in hand they might do very good and precious work and make collections. Many who have treated of the Ossetes, Mr. Howorth does not quote (notably Radde and Freshfield); but it is hardly fair to treat them with East Caucasus. If Dr. Abich still lives he could probably tell more than any other German about East Caucasus valleys and peoples. But many a cue could be got in Tiflis before beginning any such investigation. It might be his (Mr. Ransom's) fault, but he had got almost nothing out of Mr. Howorth, who, indeed, could hardly have kept the ordnance map before him. Many of the names he has could not be found, and the spelling of Klaproth was vile.

The Director announced that the Rev. Dunbar I. Heath, M.A., had been elected Treasurer of the Institute, *vice* Mr. Flower, deceased.

The meeting then separated.

MAY 20TH, 1873.

Professor BRÜCK, F.R.S., *President, in the Chair.*

The minutes of the last meeting were read and confirmed.

The following presents were announced, and the thanks of the meeting voted to the respective donors:—

FOR THE LIBRARY.

From the SOCIETY.—Monthly Notices of the Royal Society of Tasmania; Meteorological Observations for Hobart Town, 1872.

- From the SOCIETY.—*Mémoires de la Société d'Ethnographie*, tome xii, No. 63, 1872; *Revue Orientale et Americaine*, vol. iv, 1860.
- From the AUTHOR.—*Rapport Annuel, Société d'Ethnographie*, 1865; *Sur la Géographie et l'Histoire de la Corée*, 1868; *Archives Paleographiques*, 1869; *De l'Origine du Langage*, 1869; *De la Méthode Ethnographique*, 1872; *Des Affinités du Japonais*. By Léon de Rosny.
- From Dr. J. OPPERT.—*Bulletin de l'Athénée Oriental*, Nos. 13-19, 1869.
- From the AUTHOR.—*Documents Inédits sur l'Empire des Incas*, 1861. By Chas. de Labarthe.
- From the EDITOR.—*La Revue Scientifique*, Nos. 45 and 46. 1873.
- From the EDITOR.—*The Food Journal for May*, 1873.
- From the INSTITUTION.—*Journal of the Royal Institution of Cornwall*, No. 14, 1873.
- From the SOCIETY.—*Proceedings of the Literary and Philosophical Society of Liverpool*.
- From the AUTHOR.—*Della Stirpe che ha popolata l'antica necropoli alla Certosa di Bologna*. By Prof. Comm. Luigi Calori.
- From the ASSOCIATION.—*Journal of the East India Association*, vol. vi, No. 4.
- From the SOCIETY.—*Archivio per l'Anthropologia e la Etnologia*, vol. iii, No. 1.
- From the SOCIETY OF ARTS AND SCIENCES, Batavia.—*Verhandeligen*, vols. xxxiv, xxxv, and xxxvi; *Tijdschrift*, vol. xviii, Nos. 2, 5, and 6, vol. xx, No. 1; *Notulen*, vol. viii, 1870, vol. x, Nos. 1, 3, 1872.
- From the SOCIETY.—*Correspondenz Blatt*, No. 4, April, 1873.
- From the INSTITUTION.—*Journal of the Royal United Service Institution*, vol. xvii, No. 71.
- From the EDITOR.—*The Spiritualist for May 15th*, 1873.
- From the EDITOR.—*Nature* (to date).

FOR THE MUSEUM.

- From the ROYAL SOCIETY OF TASMANIA.—Two casts from Skulls of Tasmanians, two masks of Tasmanians, six stone implements, and six sheets of photographs of Tasmanians.

The following exhibitions took place.

1. Photograph of prehistoric objects found at Krasnojarsk, on the Yenisei, Siberia, accompanied by the following letter from M. E. Desor to Sir John Lubbock, Bart.

Neuchâtel, 29 Avril, 1873.

Mon cher Monsieur Lubbock,

Je suis heureux de trouver une occasion de me rappeler à votre bon souvenir en vous adressant aujourd'hui, sous bande, une épreuve

photographique, représentant quelques antiquités, qui ne sont pas moins remarquables par leur caractère particulier que par leur origine. Ce sont des objets en bronze provenant des bords du Jenisseï. Un heureux hasard m'a mis en possession de ces curieux objets. Voici de quelle manière :

Un ancien élève de notre académie, ayant été placé comme instituteur chez un riche propriétaire de mines d'or, s'est souvenu, au fond de la Sibérie, de quelques leçons de géologie et d'antiquité préhistorique qu'il avait reçues à Neuchâtel. Ayant rencontré à Krasnojarsk un ingénieur russe qui avait les mêmes goûts, celui-ci lui confia la collection qui est représentée sur la feuille photographique. Les objets y sont figurés au tiers de leur grandeur. Vous remarquerez en outre, que ceux du compartiment inférieur sont ornés de figures d'animaux, dont quelques uns sont très reconnaissables, entr'autres le bouquetin sur la pique à gauche, la tête de loup sur le couteau placé longitudinalement et avec anse, puis quatre dessins d'élaus superposés tres-frustes, mais cependant très reconnaissables sur le second couteau à droite. Outre cela, ce qu'il y a de plus remarquable, c'est la figure de lionne ou de tigre, qui se trouve à gauche en haut. Je ne saurais, pour ma part, y voir autre chose qu'un grand carnassier ou un animal fantastique, tandis que ces Messieurs de Russie seraient plutôt tentés d'y voir un écho du mammoth, à cause de la trompe, qui fait suite au museau. Quoi qu'il en soit, ces objets attestent une culture plus avancée que celle de nos palafites ou constructions lacustres. Reste à savoir maintenant, quelles sont leurs affinités. Ils ne sont évidemment pas chinois ; ils ne sont pas non plus hindous. Seraient-ils par hasard mongoles ou persans, ou se rattacheraient-ils à quelque civilisation du Touran ? C'est ce qu'il vous sera facile de décider au moyen de vos magnifiques collections du Musée Britannique. J'ajoute que ces objets ont été recueillis des pâtres tartares qui les ramassent à la surface du sol, en faisant paître leurs troupeaux dans la steppe. Ils ne sont pas non plus sans analogies avec les objets que Pallas décrit, comme faisant partie du mobilier des anciennes tombes qu'il rencontra sur les bords du Jenisseï.

Il est incontestable, que ces objets sont d'un grand intérêt pour la paléoethnologie. Les Tartares actuels n'ont aucune tradition sur ces anciens débris, pas plus que les Indiens n'en possèdent sur les anciennes populations des Mounds. Tout ceux qui se sont occupés de ces choses, à commencer par Pallas, sont d'accord à les attribuer à un peuple disparu. Quel était ce peuple ? C'est ce qu'il s'agit d'examiner en se guidant sur ces débris. On se demande involontairement, s'il n'y a pas lieu de faire intervenir ici l'ancien peuple plus ou moins légendaire des Tschoudes, dont le souvenir s'est conservé, paraît-il, dans toutes les traditions de l'Asie orientale, et qui aurait même des échos jusque vers le Nord de l'Europe. Ne serait-ce point, en particulier, le même peuple auquel nos collègues de la Scandinavie sont disposés à attribuer quelque influence sur les anciennes civilisations scandinaves ?

Quoi qu'il en soit, il y a une question qui se pose ; c'est celle-ci :

Peut-on admettre qu'une civilisation aussi avancée que celle qui est attestée par les instruments dont je vous transmets la photographie, ait pu se développer spontanément dans des conditions climatiques, comme celles de nos jours, où la température descend chaque année au-dessous du point de congélation du mercure (au mois de Janvier dernier il y a eu 40° R.) ? Cela nous paraît bien difficile, à moins qu'on ne fasse intervenir l'attrait tout puissant des mines et des lavages d'or, qui constituent encore aujourd'hui la principale raison d'être des colonies sibériennes.

J'ai bien regretté de n'avoir pas eu le plaisir de vous rencontrer aux congrès de Bologne et de Bruxelles. Je m'étais promis d'aller faire une apparition en Angleterre ce printemps. Mais je suis empêché par l'obligation, qui m'est imposée, de visiter l'exposition de Vienne. Aurais-je peut-être le bonheur de vous y rencontrer ? Je compte y être à la mi-Juin.

En vous priant d'agréer et de faire agréer à Madame Lubbock l'assurance de mes respects, je demeure,

Votre dévoué,

E. DESOR.

2. Photographs of skulls and objects from the Caucasus. By Mr. A. W. Franks.

The photographs were exhibited by permission of Miss Smirnoff, and had been sent to England by Mr. Michael Smirnoff, attached to the "Chancellerie," of the Grand Duke Michael, Viceroy of the Caucasus ; they represented various objects discovered in a cemetery called Sainthavro, at Mjhet, in Ossetia, and were accompanied by an account from which the following particulars are extracted :—

"The tombs are similar to those at Kertch, but less deep ; we opened twelve of them in three days ; some appeared to be of Semitic origin, others Sassanian, and others uncertain. In the latter we discovered the skulls of which photographs are transmitted ; they are of the same elongated type that has been found at Kertch, and described by M. Baer. The scarabæoid intaglio of Egyptian style, which is made of cornelian, was found in a Semitic tomb, on the stones of which Hebrew or Phœnician inscriptions have been found. The ornaments were discovered in various tombs, together with Roman coins ; in one instance a glass finger-ring was found, and a vial with the attributes of Hercules. Other vials with attributes of various classical divinities were found. In a tomb of the Sassanian period, I found a very fine narrow bottle of lilac glass. Over the Sassanian tombs are placed stones, reminding one of dolmens in their arrangement. The tombs are separate, and do not appear to have any relation with each other. The large inscription, of which I send a photograph, was on a Semitic tomb. To the north of Mjhet are the traces of a Jewish colony, at a place called Aceldama ; this colony is anterior to the Christian era, and the legends say that it dates from the captivity in Babylon. The Caraites of the Crimæa claim the same antiquity. In the Crimæa is a trogloditic town, inhabited by them, but

abandoned in 1868; and a similar town, also abandoned, called Oupliss Tzihé, is on the Koura, the river on which Tiflis is built. The mountaineers still dwell in towers similar to the Nuraghis of Sardinia."

3. Mr. J. Park Harrison exhibited photographs and a wooden implement from Easter Island, in the South Pacific, styled by natives "*rapa*," which is the name of the island itself, as well as that of Oparo, a smaller one two thousand miles to the west.

He said that the form of the *rapa* was something like a double-bladed paddle, spade-shaped at one end, with a long round handle, ornamented near to the upper end with a bulbous blade, beyond which the handle projects $4\frac{1}{4}$ inches, with a stop or flange (like what is often found at the end of harpoons and other weapons in the Pacific and coasts of America), about two inches from the extremity.

The implement is now only used in dances, but may have originally have been a steering paddle, grasped by the left hand of the native navigator, whilst a cord of twisted hair or sinnet was held in the other hand, or secured to some part of the vessel.

Some of the ancestors of the Easter Islanders, according to their tradition, arrived from the west in a vessel of considerable size, which must have been carried to their shores by the drift current which still supplies them with wood. Such vessels, and consequently their equipments, would be of no service to the natives of an island so entirely cut off from the rest of the world, and so the *rapas* losing their original use, were applied to another purpose—perhaps commemorative of the adventurous voyage of the people from whom they were derived. The three which are sculptured on the back of the great stone statue in the British Museum may, in like manner, have a votive meaning.

The canoes or piroques of the islanders, as described by early voyagers, were very small and were formed of pieces of drift wood sewn together with sinnet.

The lower blade of the *rapa* is ornamented about half-way down, on both faces, with two narrow arches or semi-circles cut in relief. Their interior curves are carried down the centre of the spade-like blade, and terminate on the handle of the *rapa* an inch or so below the blade. The exterior curves are carried down the sides, and end in circular ornaments or bosses at the corners of the blade.

It did not suggest itself that the ornaments on the *rapa* might be symbolic, until the remarkable series of New Ireland paddles, collected and arranged by Colonel Lane Fox (some with heads in which elongated ears are conspicuous, and others with mere typical indications of the human face), supplied analogues which seemed to render it almost certain that the arches, centre ridge, and side ornaments on the blades of the *rapas* symbolised the peculiar eyebrows, nose, and elongated ears, with discs in the lobes, which are found in the stone statue above referred to, and on the *rapas* sculptured on it, which have distinctly formed eyes and mouths.

Only two other instances have been yet met with of heads, or

portions of the features of the human face upon paddles, besides those already alluded to in New Ireland, and these rapas from Easter Island. One is a painted paddle in the model of a Nile boat of the dead, in the Egyptian gallery of the British Museum, where the eyes and eyebrows on the blade of the steering paddle are symbols of Osiris, or the sun. Mr. Tylor mentioned that "eyes" are often painted on vessels in the North-Pacific. It is curious that elongated ears and double-bladed paddles are also found in the same locality. The other is to be seen in the Christy Museum, on a club-paddle from the Solomon Islands. Here, as in the case of the wooden rapa from Easter Island, part of the features only are in relief.

There are several rapas of different sizes in the Christy Museum, all with the same ornamentation.

Mr. E. B. TYLOR remarked on the interest attaching to the paddle exhibited as an example of the disappearance, under unfavourable circumstances, of an art once flourishing. He considered the resemblances between the Easter Island and the Egyptian paddle as to form, decoration with faces, etc., as merely due to independent similar invention under similar conditions.

4. Six photographs and two casts of skulls, and two masks of native Tasmanians, and stone implements, were exhibited, the gift to the museum of Mr. Morton Allport.

In a letter to the Secretary, Mr. Allport said,

"The parcel contains two casts of faces of Tasmanian aborigines taken after death; two casts of skulls of Tasmanian aborigines, from the Lake District on the high central plateau of the island; six stone implements of Tasmanian aborigines, and a number of photographs of Tasmanian natives.

"The stone implements are of the rudest make, but are frequently met with near old camping places and shell mounds, often very far from the parent rock. In one locality, on the high table-land in the centre of Tasmania, large numbers of these rough implements appear to have been manufactured, as chips of the rock, knocked off so long ago as to present weatherworn surfaces, abound and cannot otherwise be accounted for.

"Many of the old residents in the country assure me they have frequently seen natives using these stones, both for skinning animals and for cutting notches in the thick bark of the eucalypti, while climbing. The stones were invariably grasped in the hand, never fixed in any kind of handle. Some few have been found much larger than the specimens now sent."

The following paper was read by the author :

On the EGYPTIAN COLONY and LANGUAGE in the CAUCASUS, and its ANTHROPOLOGICAL RELATIONS. By HYDE CLARKE.

HERODOTUS, in his second book, is very circumstantial and very

confident about the identity of the Colchians with the Egyptians, and the descent of the Colchians from an Egyptian colony, which he says was left there by Sesostris. This account is well known, because it is chosen as a text in Egyptian history and ethnology, from which large deductions have been made as to Egyptian influence in Asia and in Hellas. It has been particularly a matter of controversy, because Herodotus calls the Egyptians and Colchians black, and Pindar also calls the latter black.

It is well to reproduce the text. (Carey's "Herodotus," book ii, Euterpe, ch. cii, etc.)

"102. Having therefore passed them by, I shall proceed to make mention of a king that came after them, whose name was Sesostris. The priests said that he was the first who, setting out in ships of war from the Arabian Gulf, subdued those nations that dwell by the Red Sea; until sailing onwards, he arrived at a sea which was not navigable, on account of the shoals, and afterwards, when he came back to Egypt, according to the report of the priests, he assembled a large army and marched through the continent, subduing every nation that he fell in with. And whenever he met any who were valiant, and who were very ardent in defence of their liberty, he erected columns in their territory, with inscriptions declaring his own name and country, and how he had conquered them by his power; but when he subdued any city without fighting and easily, he made inscriptions on columns in the same way as among the nations that had proved themselves valiant; and he had besides engraved on them the secret parts of a woman, wishing to make it known that they were cowardly.

"103. Thus doing, he traversed the continent, until having crossed from Asia into Europe, he subdued the Scythians and Thracians. To these nations the Egyptian army appears to me to have reached, and no further; for in their country the columns appear to have been erected, but nowhere beyond them. From thence wheeling round, he went back again; and when he arrived at the river Phasis, I am unable after this to say with certainty whether king Sesostris himself, having detached a portion of his army, left them to settle in that country, or whether some portion of the soldiers being wearied with his wandering expedition, of their own accord remained by the river Phasis.

"104. For the Colchians were evidently Egyptians, and I say this, having myself observed it before I heard it (See book i, chap. iii, note 5) from others; and as it was a matter of interest to me, I inquired of both people, and the Colchians had more recollection of the Egyptians than the Egyptians had of the

Colchians; yet the Egyptians said that they thought the Colchians were descended from the army of Sesostris; and I formed my conjecture not only because they are swarthy and curly-headed, for this amounts to nothing, because others are so likewise, but chiefly from the following circumstances: because the Colchians, Egyptians, and Ethiopians, are the only nations in the world who, from the first, have practised circumcision. For the Phœnicians and Syrians in Palestine acknowledge that they learned the custom from the Egyptians. And the Syrians about Thermodon and the River Parthenius, with their neighbours the Makrones, confess that they very lately learned the same custom from the Colchians. And these are the only natives that are circumcised, and thus appear evidently to act in the same manner as the Egyptians. But of the Egyptians and Ethiopians, I am unable to say which learnt it from the other, for it is evidently a very ancient custom. And this appears to me a strong proof that the Phœnicians learnt this practice through their intercourse with the Egyptians, for all the Phœnicians who have any commerce with Greece, no longer imitate the Egyptians in this usage, but abstain from circumcising their children.

“105. I will now mention another fact respecting the Colchians, how they resemble the Egyptians. They alone and the Egyptians manufacture linen in the same manner, and the whole way of living and the language is similar in both nations; but the Colchian linen is called by the Greeks Sardonic, though that which comes from Egypt is called Egyptian.

“106. As to the pillars which Sesostris, king of the Egyptians, erected in the different countries, most of them are evidently no longer in existence; but in Syrian Palestine I myself saw some still remaining, and the inscriptions before mentioned still on them, and the private parts of a woman. There are also in Ionia two images of this king, carved on rocks, one on the way from Ephesus to Phocæa, the other from Sardis to Smyrna. In both places, a man is carved four cubits and a half high, holding a spear in his right hand, and in his left a bow, and the rest of his equipment in unison; for it is partly Egyptian and partly Ethiopian. From one shoulder to the other, across the breast extend sacred Egyptian characters engraved, which have the following meaning: ‘I acquired this region by my own shoulders.’ Who or whence he is, he does not here show, but has elsewhere made known. Some, however, who have seen these monuments, have conjectured them to be images of Memnon, herein being very far from the truth.”

Thus it will be seen Herodotus says of his own knowledge, and from the statements of the Egyptian priests, and of the

Colchians, that "the Colchians were evidently Egyptians." He says too that the Colchians had more recollection of the Egyptians, than the Egyptians of the Colchians. He refers to both people being black and swarthy, and curly or woolly haired, and as having both from antiquity practised circumcision. Then he says the Colchians and the Egyptians alone manufacture linen in the same manner, and lastly, that "the whole way of living and the language are similar in both nations."

This circumstantial account has been beset with difficulties, because the columns alleged to have been raised by Sesostris, have not been found, because no Egyptian monuments or inscriptions have been found in the Caucasus, and because the monument near Nymphæum (Ninfi) in the Smyrna district, called by Herodotus a monument of Sesostris, and described in detail as such, is now considered not to be Egyptian. As to the alleged hieroglyphies, I consider there was never anything of the kind on the monument. This so ill agrees with his description, that it may be doubted if Herodotus ever saw it. Then too there are no black people now in the Caucasus, nor any appearance of such, and it has not been known that any Egyptian language has been spoken there for thousands of years, if at all.

In 1871, Dr. R. G. Latham called my attention to the Ude language of the Caucasus, and to Schiefner's memoir upon it, in the "Memoirs of the Imperial Academy of St. Petersburg," series vii, vol. vi. On examination, I found no difficulty as to the main part of the language, because in its present form it is largely mixed with Caucasian and Tartar in words and grammar. Some of the Russian philologists have thought it related to Lesghian. As to the primary roots and numerals, I was at first not at all successful. I could find no analogies with any European or Asiatic languages; but having particular reasons for comparing with north-east African languages, I found that the affinities of the primary roots are Coptic.

A few examples are these :

		UDE.		COPTIC.
Eye	...	... pul...	...	... bal
Hair	...	... pop	...	... bo
Ear	...	... inukh	...	... maake

Some years ago it happened that I observed resemblances between the Absné or Abkhass language of the Caucasus and those of northern Africa, and this is confirmed on later examination. In the Caucasus the elementary roots of the Absné, Kuban, and Alti Kesek tribes, compare in north Africa with those of Fertit, Dizzela, the Agaw Waag, the Agaw Midr, and the Falasha.

These are examples :

	CAUCASUS.	AFRICA.
Man ...	... khatzha, kodza, aga, gu	... koshi, agardzhia, ghi, kwa
Head ...	... aka, yekka	... agher, ngari
Eye ...	... ullah, allah	... allah, ili
Water...	... aga	... agho, akwo

There is now, therefore, evidence that anciently languages allied to African were spoken in the Caucasus, and this is in full confirmation of the statement of Herodotus, as to the similarity of languages ; because we can identify not only Egyptians, but the neighbouring tribes that might be connected in migration.

The Falashas, it may be observed, are known as the Black Jews of Abyssinia, and are by some supposed to be remains of the Israelites, who did not take part in the exodus to Canaan.

With regard to our knowledge of the Ude people, Schiefner (*Acad., St. Petersburg, vi, No. 82, 1863*) says that as early as 1814 Klaproth had pointed out a peculiar people in Wartashin, in the district of Sheki, but he considered their language as Lesghian. He collected only a dozen words.*

In 1835 the attention of the distinguished Caucasian scholar, Sjögren, was turned to the subject, as he found Ude students in the seminary at Tiflis, and collected a vocabulary. In 1857, Eichwald, in his "Travels," confused the Ude with the Wotiaks, and treated them as Fins. He believed that they were the Utii or Utii of Strabo. In 1852, Isidor, the Exarch of Georgia, contributed to the Russian Geographical Society three hundred and twenty-five Udish words, printed in 1853. As there was still a belief in the Wotiak analogy, this was sent for comparison into the Wotiak districts, but with negative results. In 1857, Mr. A. Schiefner, a member of the Imperial Academy of St. Petersburg, turned his attention to the subject, and he obtained a vocabulary and other specimens of the Ude from the late George Beshanoff. He also obtained a grammar of Armenian, written for the use of the Ude people, and which Schiefner employed in studying the Ude grammar.

In 1853 and 1854 M. Kowalowsky, being in the Caucasus, engaged in Ude investigations, and co-operated with Mr. Schiefner.

In 1862 M. Berger made an investigation in the Ude dis-

* Although the name of Ude is not to be found in the index to the "Mithridates," it is, however, to be found in the work, in vol. v, pp. 134 and 159. Berlin, 1817.

At p. 134 are enumerated under No. vi, the Lesghians : 1. The Awar. 2. The Kazi Kumuk. 3. The Akush. 4. The Kura.

Among the Kazi Kumuk are included : A. Three tribes. B. Kara Kaitak. c. Thaberseran, Udia. Mukakh, Khinalug.

At p. 159, among the specimens of words from the Paternoster, are a few from Udia, which are Ude. These were probably obtained from Klaproth.

trict, and collected materials for the Wartashin dialect and the Nij dialect.

The Ude people are now confined to the two large villages of Wartashin and Nij. The former is thirty-five wersts south-east of Nukha, and has a mixed population of Ude, Jews, Tartars, and Armenians. Of the Ude there are a hundred and ten hearths of orthodox Greeks, and a hundred and ten of the Armenian Gregorian faith, but only one-half speak Udish. The Jews count one hundred and fifty-six hearths, and took refuge a hundred and twenty years ago, from Zalam, in the Qabala district. The Jews speak Tat among themselves, but also use Tartar and Persian. The Armenians have fifty hearths, and the Tartars who appear to have been formerly Ude, forty. The total number of hearths is eight hundred and ten. Nij or Nish is forty wersts from Wartashin, in the neighbourhood of the Turgan river. Its population is five hundred families, which all belong to the Gregorian Armenian religion, and have three churches.

Silk culture, husbandry, and grazing are the chief employments of the people of the village, which is more thriving near Wartashin (Beshanoff says that forty Lesghian nomades occasionally frequent Wartashin). M. Schiefner considers that besides Wartashin and Nij, the inhabitants of Sultan Nukha, Tooly, and Mirza Beglu, in the district of Qabala, and of the villages of Yengi-kend (Yenikend), in the district of Nukhé, formerly spoke Ude, although they now speak Tartar. They also belong to the Gregorian church. The Tartar of the Aderbijan dialect is winning ground from year to year, so that in a short time the Ude will become extinct. Burdaa or Berda was a town between Qarabagh and Qanja, but now in ruins and having only a few Tartar huts. Berda, in the Nij dialect, is called Wardaa. It is said that in Tschamtshian's (Chamchian) "Armenian History," it is related there was war between the king of the Udes and the king of the Armenians. It is said parts of the Ude kingdom extended into Armenia, and was called the Armenian dominion, and part into Georgia, and was called the Georgian dominion. The archpriest, John, preached in Kungut, Zazgit, Mukhass, and many other places, and built churches now in ruins. This is Beshanoff's relation in Schiefner's memoirs.

The Wartashin Udes received Christianity from Georgia, through the archpriest John, after he had cut down with two strokes of the axe a holy tree, which was to the Udes a counselling, punishing, and grace-giving god. He built a church on the spot, the ruins of which are now in an old abandoned graveyard, east of the river Wartashin, but which contain no in-

scriptions. In Beshanoff's opinion, the archpriest John was the bishop of Manglis, in the first half of the fifteenth century. According to another account, this church was built in the middle of the thirteenth century.

The Udes, from their conversion to the middle of the last century, remained in peace until the time of Nadir Shah, and until then each village was under the government of its elder or melik, which he ruled with the assistance of some elected men. Nadir Shah made the son of the former melik of Sheki, Hajji Chelibi, khan of the people, and greatly increased the tribute in silk. This family was early converted to Islam, and made great efforts to extend it. In consequence of his persecutions, and that of his son, Mehemed Hassan Khan (1783-1804), many of the Christian Udes fled to Qarabagh.

All that the Ude people know by tradition is that anciently they had an independent kingdom, of which Berdaa was the capital. M. Schiefner consequently considers this refers to the province of Uti, in Arrau, in the old Armenian Empire, where Moses of Khorene says the city of Berdaa was, and which belonged in his time to the kingdom of the Aghowan or Albanians. He intimates a doubt, however, whether this may not be a new application of the Armenian data. In the few Ude songs there is nothing historical or traditional. Moses of Khorene (book ii, 74) says that Khosrov the great was in the canton of Oudi, but whether this may be Ude is doubtful.

The Udes do not appear to differ from the neighbouring people in physical appearance. They are of middle stature, with black hair and eyes, a longish face and straight nose. The dress of the men does not differ from that of the Armenians and Tartars. The dress of the Wartashin Ude women is like that of the Armenians, and that of Nish and other villages like that of the Tartaresses. They have acquired not only the Tartar dress, but the folklore, proverbs, etc.

It is to be noted that Homer's "Iliad," ii, 856, quoted by Strabo, xii, 3, says that Odus and Epistrophus led the Halizoni. These may be the people of the river Alazon, near Iberia. Strabo (*ib.*) discusses the question who the Alazones were.

It is possible that the Odinolutes of Pliny, vi, 4, are to be enumerated among the Colchians.

There was a river Udon, which appears to have flowed into the Caspian Sea, north of Albania.

M. Schiefner thinks because Amdar means "men" in the Nij dialect of Ude, that the Ude may be identified with the Amardi (*Αμαρδοί*) of Strabo, but this is no adequate reason. He leans also to the Finnish theory of origin with no better ground. Strabo, xi, 7, says of the Vitii, speaking of Hyrcania,

"a small part of this country at the foot of the mountains, as far as the heights, if we reckon from the sea, is inhabited by some tribes of Albanians and Armenians, but the greater portion by Gelæ, Amardi, Vitii, and Anariacæ. It is said that some Parrhasii were settled, together with the Anariacæ, who are now called Parrhasii, and that the Ænians built a walled city in the territory of the Vitii, which city is now called Æniana. Grecian armour, brazen vessels, and sepulchres are shown there. There is also a city Anariaca, in which it is said an oracle was known. These tribes are predatory, and more disposed to war than husbandry, which arises from the rugged nature of the country."

The tribes, Gelæ, etc., are again enumerated later in the chapter. Pliny, vi, 15, speaking of the Caspian Sea, "at the entrance of the Scythian Gulf, on the right-hand side, dwell the Udini, a Scythian tribe, at the very angle of the mouth" (near the mouth of the Volga); next to these, he says, come the Albani. "Above the maritime coast of Albania and the nation of the Udini, the Sarmati, the *Utidorsi*, and the Aroteres stretch along its shores."

In reference to the philological relations, the Egyptian is known to have had three dialects. The priestly style was not therefore necessarily that of the people. The dialects were Memphitic, Sahidic, and Bashmuric.

The Ude still retains two dialects. It may have been a popular dialect, and still represent such.

In reference to the philological relations of Ude with Coptic and Egyptian, it is well to make some remarks for general information, as to the method of comparison. Two bases are generally referred to—roots and grammar. Most leading writers incline to the opinion that the latter must afford a safer comparison than the roots, because they suppose the structure is more racial than the words, and that these may be more exposed to the influence of foreign admixture than grammatical forms can be.

This is, however, a delusion. While it is quite true that words are communicated from one people to another, so are grammatical forms. Provincial dialects or *patois* are generally affected by the grammar of the displaced language. Throughout the Caucasus examples are to be found of the influence of ancient and modern grammars, and notably of the Turkish.

On the whole, the test of root words is the best when properly applied. The words should, of course, be taken from primary classes, such as the names of man, woman, and relationship, parts of the body and natural objects. When we get below these, the connexion is no longer so close, and the influence of

foreign intercourse becomes more powerful. There is, however, a curious instance in Turkish-Majyar. The primary roots do not show reliable affinities, while the resemblance of the grammatical system is very great; but then again there is evidence of relationship in numerous words connected with pasturage, tillage, and the pursuits of a nomad life. Notwithstanding the difference of main words, the Majyars learn Turkish very easily and very well.

If the roots of the main classes agree in two languages, no better and no greater evidence can be required, because the extensive evidence that proves the relationship between English and Frisian, does not by its multiplicity prove any more than does the limited evidence that proves relationship between English and Sanskrit. We do not require quantity but certainty. This we obtain when we have sufficient resemblance between some words of a primary class in two languages, which are numerous enough to dispose of the possibility of a mere casual resemblance, or a resemblance not of origin, but of participation in a subsequent and later civilisation.

This we have in such cases as

	COPTIC.		UDE.
Man ...	... sa ...	...	... ishu
Woman ...	... shimi	...	... shumak
Eye ...	... bal...	...	... pul
Ear ...	... maake	...	... mukh
Night...	... oushe	...	... shu
Sand...	... sho	...	... sha
Calf ...	... masi	...	... mozi

These can be recognised by the unpractised eye; but we can also take into account changes of letters, which are not so plain to the casual observer.

	COPTIC.		UDE.
Sister ...	... son...	...	... khunche
Son ...	... sheri	...	... gar
Daughter	... si ...	...	... khinar
Tail ...	... set...	...	... kodug
Sheep ...	... esun	...	... egel

are not so recognisable, and it appears hazardous to assert they are connected. Strangely enough, we have the key in the dialects of Egypt, where Camel is represented as Gamoul and Shamaiel, establishing the equivalence of *g* or *k* and *sh* or *s*. A number of words of the same meaning cannot, however, by chance begin with *s sh* in Coptic, and *k kh* in Ude.

The vowels *o* and *u* are well preserved in

	COPTIC.		UDE.
Hair ...	... ho ...	...	... pop
Face ...	... ho ...	...	... cho

	COPTIC.	UDE.
Hand ...	... tot ...	... kul
Fire ...	... klom ...	... arukh
Sister ...	... son ...	... khunche
Morning ...	... atuni ...	... akucha
Owl ...	... mulagh ...	... gugel
5 ...	... tiou ...	... kho

In other cases, the vowels *a* and *i* will be found to be preserved.

Roots worthy of observation are

	COPTIC.	UDE.
Bread ...	... oik ...	... shum
Father-in-law	... shom ...	... oga
End ...	... khæ ...	... osh
Horse ...	... htho ...	... ekh
5 ...	... tiou ...	... kho
Drink ...	... so ...	... ugh
6 ...	... soou ...	... ukh

The following is a list of comparative radicals :—

	COPTIC.	UDE.
Man ...	... sa ...	... ishu
Woman ...	... shimi, hiomi ...	... [shumak] khun, chibukh
Boy ...	... aleu ...	... ail
Son ...	... sheri ...	... gar
Daughter	... si ...	... khinar, khuyar
Sister ...	... son ...	... khunche
Father-in-law	... shom ...	... oga (see 6)
Head ...	... ape ...	... bul
Hair ...	... bo ...	... pop
Face ...	... [ho] ...	... co, cho
Eye ...	... bal ...	... put
Ear ...	... maake ...	... mukh
Nose ...	... sha ...	... boqmogh
Beard ...	... malt ...	... kajukh
Neck ...	... khet ...	... qoq, kok
Heart ...	... het ...	... uk
Hand ...	... tot ...	... kul
Foot ...	... rat ...	... tur
Tail ...	... set ...	... kodug
Flesh ...	... af ...	... eq
Egg ...	... suke ...	... qoqla, kokla
Loin ...	... sefe ...	... korom
Blood ...	... snab ...	... pi (see 2)
Bone ...	... kas ...	... [kacha ?]
Star ...	... sion ...	... khabun
Night ...	... oushe ...	... shu
Day ...	... hu ...	... ghi
Morning	... atuni ...	... akucha
Fire ...	... klom ...	... arukh
Water ...	... mau ...	... khe
Rain ...	... croou ...	... aghla
Ice ...	... ga ...	... chakh
River, spring	... iaro (ialo) ...	... orein
Earth, land	... kah ...	... kul, okal
Sand ...	... sho ...	... sha
Dog ...	... oushor ...	... kuchan

	COPTIC.		UDE.	
Calf	masi	...	mozi
Hog	esho	...	kajil
Sheep	esun	...	egcl
Owl	mulaj	...	gugcl
Food	khre	...	okhal
Fish	tebt	...	bedala
Bread	oik	...	shum (see 3)
1	ouai	...	sa
2	snau	...	pha
3	shomt	...	khib
5	tiou	...	kho
6	soou	...	ukh
7	sbashf	...	wugh
20	ghot	...	qa
To drink	so	...	ugh (see 6)
End	khæe	...	osh (see 3)
To write	sah	...	cham
Lame	shale	...	kala
To cut	shot	...	kach
To break	khash	...	khakha
To say	gho	...	kal
Little	khem	...	khuru
Wise	sabe	...	aba
Warm	khim	...	gam
Fair	saie	...	[shawa]
Negative	an	...	na

Champollion Figeac has dwelt upon the number of monosyllabic roots as a peculiar feature in Coptic, and this is likewise the case in Ude, where I have already counted nearly two hundred and fifty.

It has been noticed by Dr. Abel ("Transactions of the Philological Society," 1855, p. 157), that in Coptic one form of word may have a number of meanings, and Mr. Schiefner has made the same observation as to Ude. It is, however, in fact, more ancient than Egyptian, as it is found in the Agaw class. In Ude, however, distinctions of sound can, in some cases, be recognised, and if we had a better knowledge of ancient Egyptian we should probably find the like distinctions. It is to be remarked there are two characters in Coptic for *sh*.

	COPTIC.		UDE.	
Cut	shot	Flesh ...	eq
Sacrifice	"	Horse ...	ekh
Assassinate	"	Harvest ...	ekh
Tail	set	Ashes ...	iq
Phallus	"	Ear ...	ikh
Excrement	"	River ...	okh
Cane	sese	Comb ...	okh
Flute	"	Yoke ...	oq
Sword	"	River ...	ukh
Loin	"	Heart ...	uk
Shine	pire	Eat (to) ...	ukh
Whiten	"	20 ...	qo
Bloom	"	5 ...	kho
Call away	eshrou	Lamb ...	qal
Lament	"	Chew (to) ...	qal
Laugh	"		

The reduplication of a root, in order to increase its scope of expression, is a characteristic of Coptic, pointed out by Dr. Abel, and it is found in Ude. It belongs, however, to earlier comparative grammar, and of course affects later languages. In Georgian, for instance, which is only to a small extent monosyllabic, the number of reduplicated roots is very large, although it includes many of the Triliteral epoch.

Aiai, to become
Beshbosh, to kill
Borbor, to throw away
Sensen, sound

Kushkush, to lisp
Chuchup, to spring
Kalkala, very great
Katzkatz, to cut up
Gyzgyz, to laugh
Khurkhuru, very small
Serseri, practical, real
Nana, mother
Baba, father
Byby, bridge
Daudan, morning
Liplipkal, sleep
Lalakan, shoe
Laqlaq, very dirty
Pushpush, lungs

COPTIC.

Thophtheph, to spit
Owajowej, to chew
Krajkraj, to grind one's teeth
Teltel, to let water drop

UDE.

Qumqum, oyster
Tuntun, snuffler
Zimzim, loitering
Tsurtsur, curly
Qashqash, to bite off
Kukub, to grumble
Chuchup, „
Zikzik, to seesaw
Galgai, „
Gugu, to sum
Chuchu, to spring
Churumchurum, to stretch
Tutu, to tremble
Cakhcakh, to chop up
Lolo, to lull asleep

With regard to the grammars, they are not identical for a sufficient reason. The Ude has been for ages under the influence of foreign grammars—Caucasian (whatever that may mean), Persian and Tartar. Coptic exhibits traces of Greek influence. Thus we cannot expect absolute similarity throughout, but a careful comparison of the two would furnish a comparative grammar of Coptic, and have the result of defining in Coptic what is aboriginally Egyptian, and in Ude what is Egyptian, and thereby illustrating the hieroglyphic, and what is Caucasian in Ude, while it is more than possible that many peculiarities in the Caucasian grammars, now termed Caucasian, are really equivalent to Egyptian, earlier African, or American.

The indefinite article in Coptic is *uy*. This seems to correspond with the particle *o*, placed in Ude, to make nouns of adjectives and participles.

Nouns have only one true case in Coptic, also in Ude.

The cases are formed by particles in both languages, but in Ude they are suffixed.

There is no comparative of adjectives in Coptic and none in Ude. The superlative in both languages is formed by adding such words as *very*, etc. Here again the earlier grammar is followed.

The personal pronouns in Ude and Egyptian show resem-

blances greater between Ude and Egyptian than between Ude and Coptic.

	UDE.	EGYPTIAN (Maspero).
Sing. 1.	-zu, -za, -zi, -ts-	a-
2.	-un, -au, -n (wi), -n-	k-
		r-
3. (o? obsolete)		w-
	-sho, -shono (shet) -ne, -n	s-, su-, si-
Plur. 1.	-yan [-shi], -yan-	an-, n-
2.	-wan, -nan, -nan-, -fi	-ten
3.	-qun, -tun, -qo, -qun-	un-, u-
	-shonor (-shet-)	sen-, se-, se(t)-

Professor G. Maspero ("Journal Asiatique," 1871), in an article on Les Pronoms personnels en Egyptien, p. 8, has suggested a paradigm of the ancient Egyptian pronoun, which is strongly supported by the comparative philological evidence of Ude, as here given.

Thus in particular,

	EGYPTIAN.	UDE.
Sing. 3.	s, su, si	she
Plur. 1.	an	yan
3.	un	qun
	se, se(t)	shet
	sen	shoner

It may be observed as to vowels

Sing. 1.	a	za
Plur. 1.	an	yan
Sing. 3.	su	sho
Plur. 3.	un	qun, tun

The Egyptian, Coptic, and Ude pronouns are used as infixes inserted between syllables.

The relative pronoun corresponds, being in Coptic Et, Eth, Ete; and in Ude, Eka. It is possible that Nim, who, Coptic, corresponds to Mano, which, Ude.

N it is to be noted is recognisable in the three pronouns plural in Coptic and in Ude.

Professor Maspero supposes the N in pronouns plural in Egyptian to be the N of the plural article. N, it is to be observed, is found in pronouns plural in Ude, as in Shonor, etc.; but it is also found in the singular. The N, in *Ni*, *Ne*, in the Egyptian definite article may rather be related to the *No*, in the Ude pronouns, *Sho-no*, *Mo-no*, *Ko-no*, *Mu-no*.

The Coptic plural in -U, -Oui is paralleled by the Ude in -Ukh, and the Coptic plural in H may be related to the Ude -Kho.

The Coptic plural in -R, -Or corresponds to the -R, -Ur found in some Ude plurals.

The cases of nouns formed by particles do not show much correspondence, and this may be expected. It is only possible that the Coptic genitive *nē*, *n* may be related to Ude *nai*, *tai*, *n*, and the Coptic dative *e*, *n*, to Ude *na*, *a*.

With regard to the numerals, in the present state of our knowledge as to the history of numerals it is very difficult to arrive at an exact decision. It is well known that the Coptic numerals have been considered to be allied to the Semitic, and it is on this affirmed identity that much of the theory as to the connexion of Egyptian and Semitic is founded. The better knowledge we now gain of Egyptian, tends greatly to throw a doubt on the alleged derivation of the Egyptian numbers from the Semitic, and if it should prove that the Semitic and other numerals have been influenced by the Egyptian, it will be more conformable to the general tenor of comparative history, and may much modify our opinions.

1. *Wui*, Coptic; *Sa*, Ude. W is related to S in 7, *Shashi* and *Wugh*; 9, *Psit* and *Wui*.

It is to be noted that First is in Bashmuric Sharep.

2. *Snav*, Coptic; *Pha*, Ude. We have a parallel to this in Blood, *Snab*, Copt, *Pi*, Ude.

N changes into P or B. Also see *nau* or *begh*.

S, initial, is dropped in 2, Blood, and in 8, *shimen* and *mugh*.

3. *Shomt*, Coptic; *khib*, Ude.

Sh we have already seen to be equivalent to *kh*, *k*, and *q*, in both languages.

Thus we have in

		COPTIC.		UDE.
3	...	... shom	...	... khib
Lame	...	... shale	...	... kala
Cut	...	... shot	...	... kach
Son	...	... sheri	...	... gar
Father-in-law	...	... shom	...	... oga
Bread	...	... oik	...	... shum
End	...	... khae	...	... osh
Hog	...	... kagil	...	... esho
Break	...	... khash	...	... khakha

M is equivalent to *b* in

		COPTIC.		UDE.
3	...	... shomt	...	... khib
Mouth	...	... abot	...	... zumukh

4. *Ftoou*, Coptic; *bip*, Egyptian.

5. *Tiuv*, Coptic; *kho*, Egyptian.

T is the constant equivalent of *kh*, as in

		COPTIC.		UDE.
5	...	... tiou	...	... kho
Hand	...	... tot...	...	... kul
Neck	...	... kbet	...	... qoq
Milk	...	... khet	...	... naq
Heart	...	... het...	...	... uk
Beard	...	... malt	...	... kajukh
Moutn	...	... abot	...	... zumukh

6. *Soou*, Coptic; *ukh*, Ude.

We have again a parallel case.

	COPTIC.		UDE.
6	... soou	...	... ukh
Drink	... so	...	... ugh
Star	... siou	...	... khabun
Egg	... suke	...	... kokla, qoqla
Tail	... set...	...	... kodug
Daughter	... si	...	... khuyar
Sister	... son...	...	... khunche
Loim	... sefe...	...	... korom

It is curious to find *soou* and *ukh*, *so* and *ugh*; but we have a correspondence in *shom* and *oga*, *oik* and *shum*, *khac* and *osh*, illustrating a general law of formation.

7. *Shash*, Coptic; *wugh*, Ude.

Sh besides its affinity for *kh* has also an affinity for *w*; but there was probably more than one *sh* in Egyptian, as there are two characters in the Coptic alphabet.

The first *sh* has an affinity for *w*, corresponding with that we find for *s* in 1 and 9.

8. *Shmen*, Coptic; *mugh*, Ude.

The *sh*, initial, is an affix (see 2), and *men* corresponds with *wugh*.

9. *Psit*, Coptic; *wui*, Ude.

If the *P* is treated as an affix, then *sit* will correspond to *win*, like 7, *shashf* and *wugh*.

10. *Met*, Coptic; *wits*, Ude.

20. *Ghot*, Coptic; *Qa*, Ude.

From the foregoing examination, 1, 2, 3, 5, 6, and 7 come out as distinctly conformable, and 8 and 9 presumably so.

The verbs afford many points of resemblance, and it is to be observed that resemblance is of more weight in the comparison than dissimilarity. Dissimilarity is to be accounted for by the operations of selection, and of foreign influence. Resemblance or similarity, when existing to any extent, cannot be casual and has to be accounted for.

In the auxiliaries it is possible that *Pe*, Coptic, be, was = *Be*, Ude, do, make; *Ai*, Coptic, have, = *E*, Ude, come; and *Eta*, Coptic, have, *De*, *Te*, Ude, auxiliary. This is the more likely as *pe* is Coptic.

The present tense indefinite, *Sha*, Coptic, I am, and *Sh*, *Esh*, Sahidic, = *Sa*, Ude, the sign of the indicative present, and *Sha* — *pe*, Coptic, I was, etc., imperfect tense indefinite = *Sa-i*, Ude, the sign of the indicative imperfect.

The future is *Na*, Coptic; *Ko*, Ude.

The fourth future is *Ta*, Coptic; = *To*, *Do*, *Ko*, the future in Ude.

The subjunctive also appears to correspond.

COPTIC.

Sing.	1. Nta-	...	...	...	-Tats
	2. Ntek, Nte-	...	...	...	-Tan
	3. Ntev, Ntes, Nten-	...	...	...	-Tane
Plur.	1. Nten-	...	...	...	-Tayan
	2. Nteten-	...	...	...	-Tanan
	3. Ntou, Nte-	...	...	...	-Taun

The perfect is the original form of the root in Coptic (Abel) and in Ude.

In Coptic there is a disinclination to use the passive (Abel) and in Ude.

The pluperfect in Coptic is formed by *Ne-*, *-pe-*, which may correspond with the Ude aorist *Pe*.

The negative prefixes appear to be related.

Coptic, An, N, M, Mpe, Tm, Shtem.

Ude, Nut, Nag, Na, Ma, Te.

In Sahidic and Bashmuric there is a negative conjugation of the neuter verb with M. In Ude this negative M is found in the imperative.

The conjunction *Ke*, Coptic, may be *Qan*, Ude. The conjunction *and* in both languages is often omitted.

With regard to the dialects of Ude the materials are scanty, but between Wartashin and Nij there are considerable differences in sounds and grammar.

The chief changes of consonants are B and W, B and M, Kh, K and T, J and Ts, K and M, R and L.

The permutations between K and T, and K and M, have been shown to prevail between Coptic and Ude.

The permutations of R and L are observable in the dialects of Coptic.

Generally speaking there is a conformity of permutations between:

Coptic and Ude.

The Coptic dialects.

The Ude dialects.

UDE DIALECTS.

		WARTASHIN.		NIJ.	
Father	...	... baba	...	... bawa	
But...	...	... ama	...	... hama	
Come	...	... ari	...	... hari	
Wood	...	... shet	...	... shet	
Say ...	...	... ekhne	...	... nekhe	
Existed	...	... baneke	...	... bakene	
Barda	...	... Barda	...	... Warda	
Was	...	... qati	...	... gate	
Know not	...	... teqo aba	...	... tetum awa	
Swan	...	... ojil	...	... otsil	

		WARTASHIN.		NIJ.
Bosom	...	... on	...	... oina
Clouds	...	... haso	...	... asoi
Sour	...	... keje	...	... ketse
Female	...	... khuni	...	... khuini
And...	...	... qan	...	... gan
Sheen, gloss	...	... hisav	...	... thsal
Bear	...	... shue	...	... shuye
Third pronoun...	...	... ne, tu	...	... tun
What	...	... eka	...	... hike
Little	...	... kithsi	...	... mithsik
For, against	...	... bakhtin	...	... wakhtin

It is well to say something of the African relations of the languages of the Caucasus, so far as I know them as yet. The connexion of the Abkhass with the Agaw, etc., has been already spoken of.

Akush appears to be related to the Furian, a speech of Darfur, and therefore with Koldagi, both belonging also to the Nilotic regions of North-east Africa.

Kazi Kumuk, however, is rather akin to Kru, Yala and Kasa of West Africa.

Cherkess or Circassian has West African affinities.

Taken generally, the Caucasian group has Nilotic and African affinities, and the Nilotic group finds congeners in the Caucasian group.

In this respect also, the Hieroglyphic or the Coptic is in the Nilotic region attended by earlier languages of dark races, and the Ude in the Caucasian regions by corresponding languages.

The question naturally arises, Is the Egyptian an African language in its origin, or is it Asiatic? for with this is wrapt up the important discussion as to the origin of the Egyptian people, language, and civilisation, which have hitherto been generally supposed to be essentially and primevally of African origin and habitat.

The opinions of Herodotus must not be taken offhand. That writer had a mania for Egyptology, and Egyptian was a favourite solution with him. His statements, on examination, will be found to be vague, and there is no certainty that there was a colonisation by Sesostris, or an invasion by Sesostris of the Caucasus. Sesostris was a conventional name for a conqueror in those days, as Alexander became long afterwards.

Sesostris is remarkable as a mythical name, connecting Egypt and Chaldaea. Galloway has suspected that Sesostris is the Xisuthrus, and this is supported by the Rev. John Campbell, M.A., of Toronto, in his remarkable memoir "The Horites," 1873, p. 18. It will have been seen that *Sh*, *S* and *K*, *Kh*, are conformable in Egyptian and Ude, and it may be observed that

the Canaanite or Palæogeorgian names in *Sh* are transliterated in Hebrew by *Sh*. Thus there is a confirmation of the common origin of the mythology of early civilisation, which is discussed by Mr. Campbell. Upon this topic we shall have to seek for origins among the Agaw nations rather than among the Aryans.

What can be learned safely from Herodotus is, that there were in his day dark populations in the Caucasus, that they practised circumcision, and that a language like Egyptian was spoken. We may consequently admit that there was then a resemblance between the populations of the Caucasus and those of the Nile region.

Looking further, we shall find that neither the Caucasian nor the Nilotic region is to be regarded as a sole centre of the populations speaking Caucasian or Nilotic languages.

True it is, the Egyptians (Southern or Ude) cannot be traced further; but the earlier members in each group, even in the present state of the investigation, I can identify elsewhere.

The Agaw or Abkhass is defined in West Africa, in the Gadaba of India, and in the Rodiya of Ceylon. It is in the New World, in South America, that we have its greatest present extension, covering Brazil and Guiana as the Guarani, Omagua, the Movima, and the Sapiboconi.

Without extending the chain of evidence, these Agaw groups are sufficient to show that the Caucasian and Nilotic regions are not sole or chief centres, but only local centres or ganglia of large migrations.

If this is the case with the Agaw it must be so with the Egyptians, which is far later. The Agaw migration or conquest must have preceded the Egyptians, but there was an earlier member in all the nuclear regions, still identifiable, ethnologically or linguistically, in the Nilotic region. This is represented by the family of the Gonga languages, Kaffa, Woratta, Yangaro, and Dalla, whose affinities are with the remarkable Mincopie languages of the short or dwarf dark races of the Andamans, mythologically or linguistically recognisable in so many centres of refuge in the Old and in the New World.

Unless, therefore, we assume that all races had an African origin, including the Mincopie and the Agaw, and their intervening or accompanying members, we cannot attribute an African origin with any certainty to the Egyptians. The fact of any portion of their populations being dark is not in ethnological consideration a point in favour of an African or tropical tendency, because, in the prehistoric as in the present epoch, dark races can be found in temperate or cold, as well as in tropical districts.

It must consequently be regarded, at least, as an open

question, whether the Egyptians moved from south to north, or from north to south. In the supposition that there were two Egypts or Mitzraim, one in the Caucasus and one in Africa, we get a possible solution of some prehistoric or protohistoric problems.

We must first accept a harmony of ethnological conditions, that in Caucasia and in Africa there were not only dark races, but at an early period Mincopies, represented by pygmies in legend, in both regions. We have also two Agaw lands, possibly two Havilah.

In examining the peculiarities of Egyptian grammar, in Coptic, many of these are found in Agaw or African; in Ude they are found in Abkhass or Caucasian. In the latter case, they are considered as examples of Caucasian grammar. In Ude are many Abkhass words. Lest it may be imagined that in these instances the Egyptian influenced the Agaw, instead of the Agaw influencing the Egyptian, we may hereby seek our test in the American Agaw, the Omagua, or Guarani.

In Egyptian, we have numerous monosyllabic roots, and of these many are apparently of the same form, but differenced in pronunciation, so as to distinguish the various significations. This we find repeated in Ude and Abkhass, but what is more to be regarded, we find it in the South American Guarani.

There is, so far as appears, no such thing as a Caucasian grammar, and no such thing as an American grammar. In the case before us there is an Agaw grammar. The Caucasian peculiarities are not local, and in South America they cannot be regarded as Caucasian, while Guarani or Omagua is just as much Caucasian grammar as American grammar.

The fact is, ethnological evidence will force on philologists a new system of classification, which can no longer be by localities but by race. When a particular race, as the Agaw, the Semitic, or the Aryan, has influenced the grammars of other races, the effect may in any district appear to be local, but it must assuredly be due to race. Philology is much more dependent on physical researches than has been supposed, as physical researches have nearer relations to philology than there has been any disposition hitherto to admit.

On finding an influence of Agaw grammar on Egyptian, we must be prepared to allow that this will not be the only mental influence, and not the sole propagation or development of aggregate and continuous thought, and we shall have to seek in the mythology and folk-lore of the preceding races much that has been hitherto regarded as exclusively and generically Egyptian and African.

If there is at first a confusion in accepting a north to south

migration of the Egyptians, instead of that from south upward, it may nevertheless not appear so unaccountable, if we regard the annals of later migrations, those of the Hebrews. Here we have, first, an alleged migration from north to Egypt, and then from Egypt in the south by the north to Canaan. Here is a race white in its main elements, but showing a decided tendency, in some cases, to the hair and features of the North Africans, and this race speaks a Semitic language, which has affected the whole of North Africa.

Havilah is in the oldest collections a double name. It is that of the son of Cush, the brother of Mitzraim, in the Book of Generations; but it is the land in which the river Pison or Phasis flows, in the description of Paradise. Havilah I believe to be Khavilah, the land of the Agaws. If, according to a prevalent opinion, we accept it as Colchis, then it is undoubtedly the country of the northern Agavs, Akhaivi, or Avkhass. The northern Havilah would be the Agaw land on the Nile.

When we have to deal with Paradise, after accepting Pison in Havilah, Hiddekel in Assyria and Euphrates, there has ever been a stumbling block in the river that compasseth the whole land of Ethiopia. With a Cush, Mitzraim, and Havilah in the Caucasus, the rivers can be better accounted for, and in conformity with the Chaldaean or Caucasian type of the legends. Many of these cannot, as commonly supposed, have originated after the captivity in Babylon, but they are in this valuable record in a most ancient form.

In this consideration, we find at once an explanation of the remarkable resemblance of the Prehellenic with the biblical types, the form of the names in the Theban and other series showing in many examples that they are not Hellenic or Semitic, but belonging to earlier epochs.

Under such investigation we shall find, as we want to find, earlier materials for Egyptian mythology, so far as it was not purely Egyptian, and we likewise obtain the means of better studying the language of the hieroglyphics. Hitherto, this has been dependent on another dead language, the Coptic, but in the Ude we have a living Egyptian, and of the earliest type, and in the Agaw languages we have elements for dealing with some other points of formation. Thus, we may carry out for Egyptians a comparative grammar.

The history of the Hebrew migrations involves probably a mixture and confusion of two or more examples of Cush, Havilah and Mitzraim interchanging Caucasasia and Africa. The history of the previous Egyptian migration may refer to a first occupation of Caucasasia, and then an advance into Africa, where this Egyptian race may have acquired a civilisation it did not

possess in Caucasia. Under such circumstances, although Herodotus would still find in Caucasia an Egyptian-speaking population, there might be no hieroglyphics, and no monuments of the types now so familiar to us.

It may be suggested that circumcision was derived by Egyptians and Syro-Arabians from earlier races, and propagated from a common centre, passing into Africa, and being ultimately better preserved in Arabia and Africa.

The fact that the Udes, Abkhass, and all other Caucasians are no longer black, needs little space in explanation. While the languages have in some cases resisted the invasions of the Georgians, Armenians, Greeks, Persians, and Turks, constant intermarriages with the invaders have replaced the aboriginal types, but not without bearing evidences of survival.

The study of the Ude language and population, as well as that of others in the Caucasus, is of great importance in all historical investigations, because it will greatly assist in laying better foundations for history. The language of the few hundreds who now speak Udish will, under the invasion of Turkish and Russian, in our time perhaps cease to live, and the collection of every fact, however small, however isolated, is valuable, because one fact may be the connecting joint or link of a chain of evidence otherwise incomplete.

DISCUSSION.

Dr. LEITNER was at a loss to understand why he should have the honour of being the first to be called upon to make a few remarks, unless it was an act of great courtesy and kindness extended to him, as he had just returned from Northern India with the results of, perhaps, interesting explorations. Among these, one of the most prominent was connected with the Khajunà language, spoken in Hunza. Dr. Clarke had caused some attention in India by his efforts to trace an analogy between that language and certain dialects spoken in the Caucasus and among perishing tribes there and elsewhere. If he succeeded, he would bring us back to a period far anterior to that assigned by popular, as well as even scientific, superstition to the Sanscritic form of language. With regard to the "Egyptian Colony and Language in the Caucasus," he had only been in the room for a few minutes, and had had no time to examine, even cursorily, the material on which Dr. Clarke's conjectures were based. He must, therefore, leave their discussion to the able men who were present, and who had heard the paper from the beginning.

The Rev. A. Löwy adverted to three of the subjects of which Dr. Hyde Clarke had treated in his lecture on "The Egyptian Colony in Colchis," viz. :

1. Circumcision.
2. The land of Havilah, and

3. The affinity which, it was argued, can be discovered to exist between the language of Egypt and that of Ude.

1. In regard to circumcision, Mr. Löwy stated that the ancient Hebrew records incidentally support the opinion that the practice of that rite was known to tribes that were held to be "brothers" of the Hebrews (namely the tribes notoriously belonging to the Semitic race), and also to nations that appear to have had a pedigree different from that of the Hebrews. The passage in Genesis xxxiv, verse 22, suggests the possibility that the mode of performing the operation of circumcision differed amongst various tribes or nations; for it is mentioned there, that every male of the subordinates of Hamor, the father of Shechem, should be circumcised "as they, the Hebrews, are circumcised."

2. Havilah, the Eldorado of the ancient Hebrews, is mentioned in the Jewish Scriptures as an *appellative*, with the definite article. As such, the meaning of the underlying actual or conjectural etymon was clearly understood by those whose vernacular language was Hebrew, and who connected it with the radical term **הַיִל** (Hāyil), which signifies "wealth," "abundance," "power," etc. In the early genealogies (Genesis x), Havilah is named as a brother of Sheba and Ophir, amongst the tribes inhabiting Southern Arabia.

3. To establish on a sound basis the connection of different languages of Asia and Africa, or of any other part of the world, the principles of each of the languages concerned in the comparison must be fully ascertained; and the laws by which transmutations are possible must be as clear as are those which are in operation in the Aryan stock of languages. The opportunity of recognising the alleged connection between the Egyptian and the Ude languages was insufficient to anyone who, like Mr. Löwy, had only seen one of the tables of a comparative vocabulary, drawn up by Dr. Clarke. Mr. Löwy had counted ten words, in which there was, more or less, a resemblance between Coptic and Ude words. As it would be contrary to rules of philology to hold that any merely casual resemblances prove the common origin of languages under examination, further proofs must be had before a safe opinion on the affinity of the two languages can be legitimately formed.

Mr. E. B. TYLOR remarked that the claim put forth by Mr. Hyde Clarke, to have discovered a connection between languages of the Caucasus and of Africa, to say nothing of South America, was one which would require very strong and precise evidence to substantiate it. He regretted that the tables of similarities on which the author relied had not been set up on the walls, for the meeting to judge of their extent and weight, and he pointed out, that in the only list circulated which had happened to come into his own hands, several comparisons of words were made in which there was no similarity at all. The meeting, he thought, would do well not to express any acquiescence in Mr. Clarke's views till they had fuller means of judging of the weight of the evidence.

Mr. CLARKE replied that the evidence would be found in his paper.

The PRESIDENT remarked that Mr. Hyde Clarke's observations afforded, to some extent, a proof that linguistic peculiarities could not in all cases be regarded as indicative of physical affinity between distant races. If it be true, as stated by Herodotus and Pindar, that at a former period a dark or black race existed in the region occupied by the tribes described by Mr. Clarke, all trace of its blood had long disappeared, and yet it would seem that some traces of the language spoken by this African race still survived.

The meeting then separated.

JUNE 3RD, 1873.

Professor BUSK, F.R.S., *President, in the Chair.*

THE minutes of the previous meeting were read and confirmed.

The following presents were announced, and the thanks of the meeting voted to the respective donors.

FOR THE LIBRARY.

From the EDITOR.—*La Revue Scientifique*, Nos. 47 and 48, 1873.

From the IMPERIAL ACADEMY OF SCIENCES, VIENNA.—*Sitzungsberichte Philos-histor*, 70 Band., Heft 1-3; 71 Band., Heft 1-4; Register vii, ditto; *Math-natur*: 1 Abtheil, Heft 1-5; Ditto 2 Abt., Heft 1-5; Ditto 3 Abt., 1-5; Register viii; *Almanack* 1872.

From the ROYAL UNIVERSITY OF CHRISTIANIA.—*Beretning om Sundhedstilstanden og Medicinalforholdene i Norge*, 1869-70; *Tabel-ler over de Spedalske i Norge*, 1870; *Generalberetning fra Gaustad Sindssygeasy*, 1870-1.

From the AUTHOR.—*Om Dodeligheden i det forste Leveaar*. By A. N. Kiær.

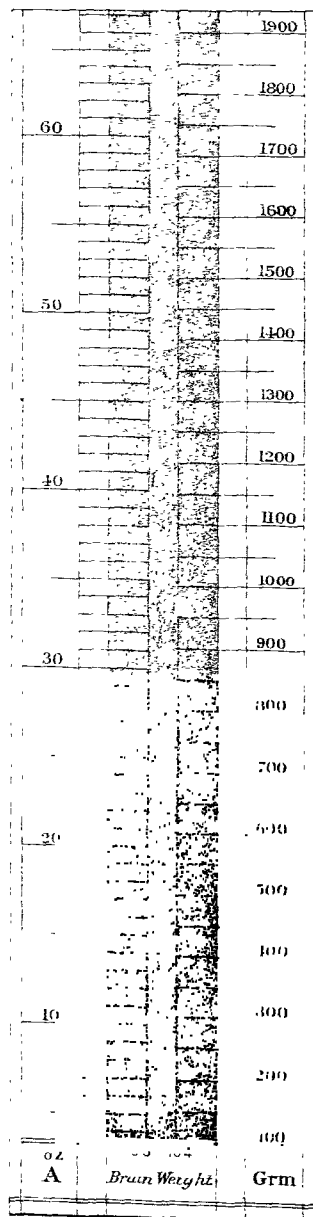
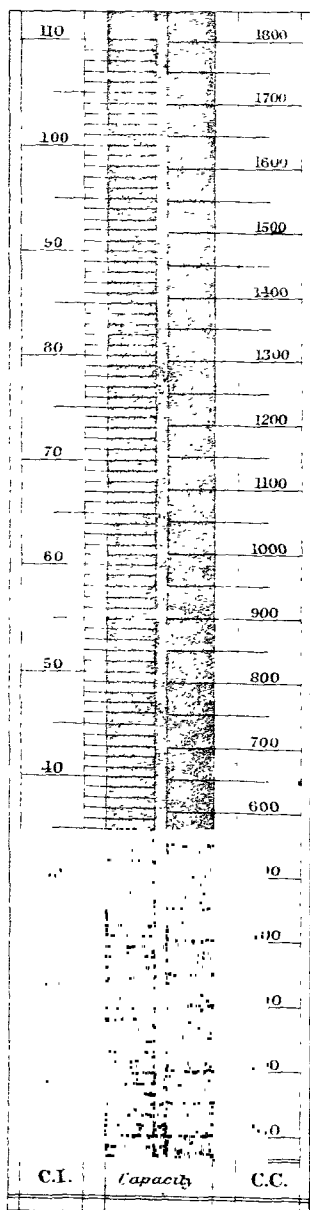
From the EDITOR.—*Nature* (to date).

The President read the following communication:

NOTE on a READY METHOD of MEASURING the CUBIC CAPACITY of SKULLS. By G. BUSK, F.R.S., President of the Anthropological Institute. [With two plates].

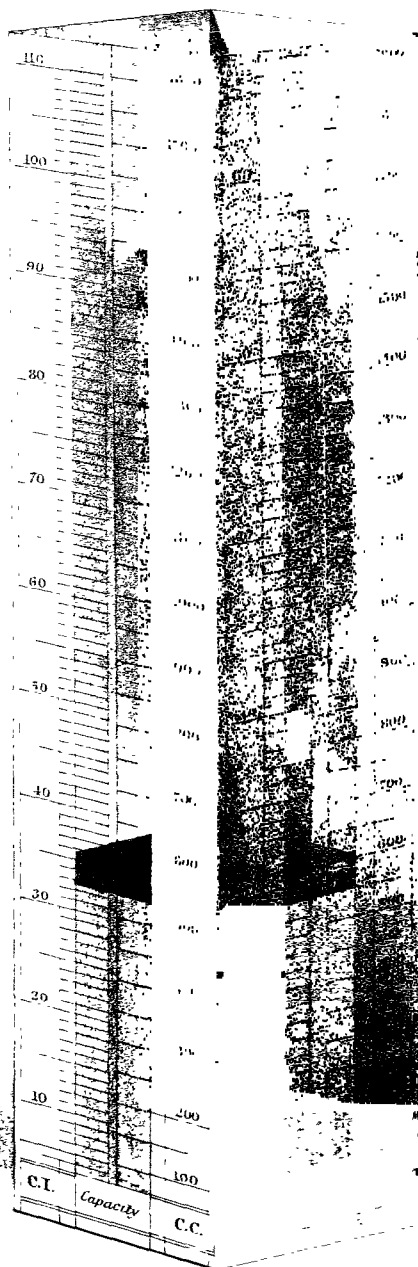
HAVING lately had occasion to take the internal capacity of a considerable number of skulls, I was induced to consider how this might be done quickly and conveniently; and having found that the simple contrivance I now bring before your notice

CHOREMOMETER. - BUSK.



HALF SCALE.

CHOREMOMETER. — BUSK.



SCALE

answers every purpose, I hope it may prove equally convenient to others.

The most perfect way of ascertaining the capacity of an irregular cavity, is of course by means of filling it with water or other fluid, whose quantity is afterwards measured.

The difficulty however, of closing all the openings in a skull, and the time that would be occupied in attempting it, are such as to render this proceeding inapplicable except in very special cases.

Instead of water, several dry materials have therefore been usually employed, as sand and different sorts of seeds, such as rape, buckwheat, millet, pepper, etc. It is not in reality, perhaps, a matter of very great consequence which of these kinds of materials is employed if proper care be taken, but on the whole, I myself very much prefer fine, clean, sharp silicious sand, such, for instance, as is used in the construction of hour-glasses. I have been told by some that they find it difficult to obtain constant results with sand, but this is, I think, owing to their not having attended to one or two points as regards manipulation, to which I shall presently refer.

The skull having been filled, the sand or other material must then be either measured or weighed. Dr. Morton* describes a contrivance for measuring devised by Mr. Phillips, which no doubt would answer the purpose quite well, but seems to be more cumbrous in its make than is at all necessary.

Messrs. Barnard Davis and Thurnam† express the internal capacity in ounces avoirdupois of Calais sand, to which they assign a specific gravity of 1.425, and they reduce the ounces into cubic inches by multiplying them by 1.22.

Dr. Welcker‡ gives a table representing the conversion of ounces into cubic centimeters, having, as it would seem, adopted the plan of weighing from Davis and Thurnam. His specific gravity for the sand, however, differs slightly from theirs, being 1.422.

Tiedemann, as quoted by Dr. Thurnam computed the capacity from the weight of millet seed.

Besides the inconvenience of being obliged to have a large pair of scales and weights at hand, it appears to me that the use of weighing when we have a ready means of directly measuring is at least needless; but it is liable also to the graver objection that no two samples of sand appear to agree in specific weight, using that term, though an erroneous one, in the sense of expressing the weight of dry sand in a vessel of given capacity as

* "*Crania Americana*."

† "*Crania Britannica*," p. 220, 1865.

‡ "*Archiv. f. Anthropol.*" ii, 1866.

compared with water. And it is probable that the different sorts of seeds would differ still more widely in different samples, and would be especially liable to be affected by hygrometric conditions.

As regards sand, I may mention as an instance of the uncertainty I mean, that whilst of the sand used by Messrs. Davis and Thurnam 28·5 ounces filled a pint measure, the same measure would contain 29·35 ounces of that employed by me. In fact it is obvious that as the real specific gravity of silicious sand is the same as that of the quartz of which it is composed, viz., from 2·4 to 2·6, any difference from that in dry loose sand must depend upon the degree of closeness with which it is packed, and in some degree also upon the general shape of the particles. A sharp sand, that is to say one whose particles are more or less angular, will allow of their being shaken into closer contact than would be the case with particles worn more or less spherical. A fine sand also, especially if mixed with dusty particles, may be packed closer perhaps, or leave smaller interstices than a coarser one with rounded grains.

As the number required to multiply the ounces by to reduce them into cubic inches will of course vary according to the intrinsic weight of the sand, it is at once obvious that that quality is of great importance, and that there would be considerable chance of error in using sand whose weight had not been previously carefully ascertained, which would require accurate measuring and weighing by means not always, perhaps, at command.

From numerous trials, I find that the multiplier above referred to may vary from 1·22, which is that of Messrs. Thurnam and Davis (I presume for quite loose unshaken sand) to 1·01 for closely packed fine sand.

Although, therefore, in the absence of any proper means of measuring the sand or seeds, their weight may be made to serve as an indication of capacity, there can, I think, be no doubt that it is preferable to follow the method of measuring with a suitable apparatus, as being more direct, quicker, and in all respects more convenient.

That which I employ and which I propose to name a Choremometer (Plates xi and xii), is a graduated vessel, made of five pieces of glass, 3 inches square in the interior, and about 12·5 inches deep, so that it is capable of containing 108 to 110 cubic inches, which is enough for nearly all skulls. It is graduated on the different sides, so as to indicate by the height to which water, sand, or seeds fill it, the space occupied, which is represented on one side in cubic inches by lines one-ninth of an inch apart, and on the opposite column in cubic centimeters, of which a hundred correspond to 6·1 cubic inches. On another side the vessel is

graduated so as to indicate the corresponding weight in avoirdupois ounces and also in grammes of water: and on a third side the corresponding weight of the same bulk of brain substance (specific gravity 1040) including the membranes. If thought desirable, columns might also be given to represent the same weights in troy ounces. Of course having once obtained the cubic inches, all the items in the other columns may be readily computed, but time and trouble are saved by the observer being able to read off at once the particulars he requires.

The dimensions of the vessel have been chosen as the most convenient for one intended to contain so much as 110 cubic inches. If narrower it would be unwieldy from its height, like Mr. Phillips', and if wider the divisions would be so near together as not to be read with the same facility.

In order to insure that the surface of the sand, etc., is level, it is convenient to use a sort of piston rather less than three inches square and fitted with a stem.

As the quantity of sand that can be introduced into a skull differs considerably according to the way in which it is introduced, it is very necessary that this should be done in a uniform manner. Two modes may be employed; in one the sand is poured in till it appears at the *foramen magnum*, when the skull is to be moved very gently and without any succession in different directions, and then more sand is to be poured in, and so on until no further quantity can be introduced.

Another method, and that which I employ as giving more constant results, is to stand the skull base upwards, on a small heap of sand in a dish of any kind, and having filled it up to the *foramen magnum* to pat it as it were forcibly with the open hands on both sides, and to continue the filling and succession till no more can be introduced and the sand stands at the level of the border of the *foramen magnum*.

In proceeding to measure the quantity, the same proceeding must in either case be adopted. If the sand has been introduced loosely and lightly, it must be gently poured into the measure and allowed as it were to find its own level without any succession or shaking whatever. But if, as I strongly advise, it is employed in the second manner, the sides of the choremometer must be patted and the sand shaken down in all possible ways until it will sink no lower.

In all cases, in short, whatever the way in which the skull itself is filled, the same must be followed in filling the measure. It is for this reason that it is highly desirable to have a vessel that will take in all the contents of the skull at once. Moreover, as the density of sand, even when carefully shaken, varies according to the bulk of the vessel containing it, it is neces-

sary that the measure should be as nearly as possible of the same dimensions as the skull.

DISCUSSION.

Professor ROLLESTON said that in his hands rape seed had proved itself a better material for cubing skulls than either sand or millet seed. Professor Wyman had given an account in detail of numerous experiments with various substances used for this purpose, in his pamphlet, "Observations on Crania," Boston, U.S.A., 1868, and he had summed up strongly against the use of sand. It was to be hoped that by a series of observations upon the relations subsisting between cubic capacity and external measurements in skulls, where both sets of measurements could be taken, some means of judging, at least approximately, of the cubic capacity would be obtained for skulls too fragile or imperfect to allow of being cubed. The weight of the skull would have to be taken in such a preliminary comparison of external and internal measurements, as furnishing something of a check upon the disturbance which differences in the thickness (and consequently the weight) of the skulls would introduce.

The President exhibited a series of stone implements from the Island of St. Vincent, West Indies.

Professor ROLLESTON exhibited two bronze spear-heads, found in peat near Newbury, upon the property of Major Bunny. Similar spearheads were to be found figured in Lindenschmidt's "Die Alterthümer unserer heidnischen Vorzeit," Band ii, Heft iv, Taf. 1; and in Westropp's "Prehistoric Phases," pl. iii; and, as Mr. Boyd Dawkins had informed him, in an account of an Etruscan Necropolis, at Marzabetto, published in the Bologna volume of the "International Congress of Prehistoric Archaeology," p. 248. He exhibited also a bronze sword, dredged up in the Cherwell, near Oxford, and presented to the museum by the Rev. T. H. P. Hopkins, Fellow of Magdalen College.

He showed also certain recently manufactured net-sinkers from the English Lake District, referring to the possibility of mistaking them for prehistoric weapons. Some polished "green-stone" ornamental axeheads, probably Caribbean; and a perforated stone hammer, recently dug up in Oxford, together with a large number of human and sheep bones, were exhibited by Professor Rolleston at the same time.

Col. Fox, Mr. FRANKS, and Mr. BOYD DAWKINS joined in the discussion.

Mr. A. W. FRANKS exhibited a bow and two arrows of the

Modoc Indians, which he had just received from Mr. William Simpson, correspondent to the "Illustrated London News." The bow is three feet four inches long, and of the usual type of those used by the Californian Indians. The body of light wood, and the back coated with deer's sinews, stated to be attached to the wood by glue made out of deer's legs. The string is also of deer's sinews. Round the centre are bound strips of leather to give a better grip. This bow was found in Captain Jack's stronghold in the Lava Beds, Siskiyou County, California, when it was taken, 17th April last. It fell into the possession of Mr. H. Wallace Atwell, who gave it to Mr. Simpson for the National Collection.

Of the arrows, one has a barbed iron point and a slender stem; it is stated to have belonged to Scar-faced Charlie, one of the heroes of the recent campaign. Iron heads were introduced among the Indians by the diggers. The other arrow has a reed stem and an obsidian head very neatly clipped, being the more ancient form of arrow. These arrows are stated to be poisoned; the poison being made by keeping a coyote's liver till it has become putrid, and then a rattlesnake is made to bite it and impregnate the mass with its venom.

These bows and arrows are now out of use, the Indians being armed with rifles and revolvers; they are still employed for hunting to save powder and shot, and are principally used by old men and boys.

The members will remember that some interesting illustrations of the war with the Modocs of the Lava Beds, due to the skilful pencil of Mr. Simpson, have recently appeared in the "Illustrated London News."

Rev. DUNBAR I. HEATH exhibited a mural inscription in large Samaritan characters sent to him from Gaza, by Mr. Charles Hamilton, where it had been lately found by Mr. Pickard, a resident Englishman. The inscription is from Deuteronomy iv, 29, 31, and shows interesting variations from the authorised version. It being an evident fact that both in the New Testament and in the Septuagint, the use of the word Jehovah had been completely dropped among the Jews, a question might be raised whether such an inscription as this, with the name in it three times, fully legible to all the people, may not have been probably erected previous to the disuse of the name. Mr. Heath then proceeded to argue from internal evidence that the Samaritan form of letters was earlier than the most archaic of the Phœnician types. The Samaritan could be grouped into classes: *a, u, i, t*, in one class; *k, n, m, p*, in another; *h* and *ch* in another; *b, d, r*, in another. In Phœnician only the class

containing *b*, *d*, *r* remains intact. Mr. Heath showed also how easy and natural it was to pass from the Samaritan forms to the Phœnician, but altogether unnatural to pass the other way.

DISCUSSION.

The Rev. A. Löwy stated, that there was sufficient evidence to show that the form of the Samaritan characters was far more ancient than the form of the Hebrew "square" characters. The latter were originally, in a crude shape, used in rapid writing, and, as may be noticed in the Babylonian bowls at the British Museum, constituted the "running hand." In the Talmudical treatises we find incidental notices of the archaic shape of the Hebrew alphabet. The letter *y* ('Ayin) was similar to that of the Samaritans, and was joined at the top. The triangular shape of the 'Ayin, occurring both in the Samaritan and in the ancient Hebrew writings, tends to prove that before the separation of the two forms, the Jews wrote their scriptures like the Samaritans. This fact is, moreover, corroborated by the inscriptions on the Maccabean coins. The Phœnician characters being much simpler than the composite Samaritan, appear to have the claim to greater antiquity, and contain more of that typical shape which recurs, under modifications subject to a love of symmetry and tasteful forms, in the Greek and Italic alphabets.

Mr. GEORGE ST. CLAIR stated that he could see but little force in Mr. Heath's arguments. Mr. Heath gave us three vowels out of five, and adding the letter *t* to them called these a type! If they were a type, they at any rate were not a class. His next "type" consisted of the letters *k*, *m*, *n*—two liquids and one letter anything but a liquid. Again, the assertion that the forms of the Samaritan letters bore closer resemblance to the objects which their names indicated, which Mr. Heath sought to support by the instance of the letter *beth*, seemed rather contradicted by that letter. *Beth* means a house or dwelling; an early dwelling would be the tent, and the Phœnician letter was a better representation of a tent than was the Samaritan letter. He had that morning compared the Samaritan letters, as given by Gesenius, with the Phœnician letters as found on the Moabite stone, and proceeding on the principle that simpler forms—*i. e.*, forms easier to write—were more recent than complex forms, it did indeed appear that the Samaritan letters were the more ancient. Of twenty-two letters, it appeared to him that the Samaritan had thirteen decidedly more complicated, four rather more complicated, three of about the same degree of complication, and only two of less complexity. Even of these two one was the *teth*, which did not appear on the Moabite stone, and which therefore he had taken from the Assyrian tablets. But the question might be asked, does greater complexity in the letters imply greater antiquity? The Greek *beth* was more complex than the Phœnician, from which it was derived, and the same was the case with one form of the Greek *rho*, and with some English letters derived from the Phœnician through the Greek. Again,

would it never be a fashion to increase the complexity of letters by way of ornamentation? Were not the German letters more ornamental than the old forms from which they were derived? Or would there never be an effort to revive antique forms, as we see in English to-day? In the Semitic languages the names of the letters were the names of things—*ox*, *house*, *camel*, *door*, etc., and the Samaritan letters looked less like the things than did the Phœnician letters. This told against Mr. Heath's supposed derivation of Phœnician from Samaritan, and indicated that the derivation was the other way. He believed that Mr. S. Sharpe, of Dallington, traced the "square" Hebrew characters from the Phœnician through the Palmyrene and Samaritan. It appeared to the speaker that although the Samaritan characters were so different from the Phœnician, several pairs of letters which resembled one another in the one language did so also in the other: for instance, the *he* and the *cheth*, the *beth* and the *resh*; and there were in Samaritan some additional resemblances, as the *aleph* with the *tau*. The Hebrew *aleph* and some other letters bore considerable resemblance to the corresponding Samaritan letters, indicating that the square Hebrew might be derived from Samaritan; and this did not appear to support Mr. Hyde Clarke's suggestion (made at the British Association meeting at Brighton), that the square Hebrew originated in some cabalistic figures.

MR. MOGGIDGE said: I would wish to call attention to the similarity of some of the characters now displayed to those on rocks—varying from 7000 to 8000 feet above the sea—about thirty miles north of Mentone; inasmuch as the inscriptions to which I allude have never been deciphered. Indeed they were unknown until a few years ago, when I brought away copies of some of them. The result of that visit was a paper (with drawings), read before the International Archæological Society, published by them, a copy being placed by me in your library. It would give me much pleasure to afford any information that might be desired to gentlemen conversant with the languages we now see before us. I may add that the characters were made by repeated dotting with a sharp pointed instrument; and occur frequently on the horizontal surfaces of rocks which occupy an area of about a mile square—elsewhere I have not found them.

MR. HYDE CLARKE supported Dr. Löwy, and said that it did not follow because a name was written or known, that therefore it was publicly pronounced. He called attention to the secret or magic names of Greek cities, which it was forbidden to divulge. Where taboo existed, the use of many names, known by the actual prohibitors, were prohibited. Such treatment of sacred names was a mere extension of taboo. As to the antiquity of the type to which Samaritan characters belonged, without adopting the precise views of Mr. Heath, he concurred with him, that it was quite possible they were of ancient origin, nor did ancient or modern use militate against the fact of antiquity. The Tuaricks and the Abyssinians were using characters anciently employed in Libyan, Ethiopian, and Himya-

ritic. In the Libyan or Thugga, a cuneiform character was to be recognised, and there was a passage of hieratic and cuneiform through Cypriote. The system of survival was of wide application. He considered that in the present state of our knowledge, caution was required, and that we were not justified in attributing the origin of all alphabetic systems to the Phœnician. He called attention to the possible relations of the hieratic, cuneiform, square alphabet and magic or cabalistic character.

The author then replied.

The following paper was read by the author:—

STRICTURES *on* DARWINISM. PART II.—*The* EXTINCTION *of* TYPES. By H. H. HOWORTH.

HAVING dealt with one of the difficulties of Darwinism, I now proceed to another which is based on wider grounds, the objection being as much to the method as to the results of that system.

There are two methods of investigating scientific subjects, one is the empirical method, the other I would call the retrospective or historical method. The former is applicable to the investigation of a subject in which we can try experiments to test results. The other is a sounder and safer method, when we have to deal with the sequence of events in order of time, or when our problem is to discover the origin and progress of things; or to use a simile, the former is applicable to the study of the topography of nature, the latter to its genealogy.

Mr. Darwin's is a very profound and sublime attempt to trace out the genealogy of one aspect of nature, namely, that of life. No investigator that I know, ever approached the magnificent problem with anything like his power, ingenuity, wealth of illustration, and candour; but I believe that not only are his facts susceptible of a different reading, but that his method is faulty. I believe the problem can only be solved by the historical method, while he has attempted its solution empirically. He has employed an immense array of experiments to show how certain forms arise, and has then concluded that the laboratory of nature has been only an enlarged copy of his own laboratory and nothing more, and that "the increasing purpose that runs through all the ages," has been identical in aim and in results with the purpose that furnished naturalists with an encyclopædia of first-rate experiments, in the work on "The Variation of Animals and Plants under domestication." Mr. Darwin, on the other hand, has neglected that much more crooked and perverse method we must employ, if we start from the world of to-day, and work our way back to the origin of things, step by

step and link by link, as we do when we are writing the history of constitutions, of laws, of the arts, and of the progress of mankind generally. In all these we deem it a waste of ingenuity to argue what has been, from what may be, and the problem of the origin of life differs from such questions only in the kind of evidence, and not in the method of its investigation.

It may be said this is very true, and that the historical method is the best, but that it is extremely limited in its application; that while we deal with the narrow subject of man's history, we have evidence which enables us to construct a sound pedigree, but that when we go beyond this into the wider and more general problem, evidence of the same quality fails us, and we are left to analogies of a different kind altogether; and that instead of following the stream to its fountain head, we are forced by the limits of our problem to reason, *à priori*, from our experiments. I cannot admit this plea. That our evidence is scantier in the one case than in the other is partially due to the nature of the question, but much more largely to the elementary stage at which the discussion has as yet been carried. I cannot admit that because our facts are not so numerous as we should wish, we must therefore abandon them entirely in favour of such potentialities as we may deduce from our experiments. It may be true that one way of constructing a sphere which shall float about in space, is to blow a soap-bubble with a pipe; but my instinct revolts against deducing from this experiment, the result that this great sphere upon which we tread was similarly constructed. Just as my instinct revolts against the similar form of reasoning which would trace out the genealogy of life and its origin from experiments upon a few tame animals.

The moral of my argument is, that in investigating the problem of how one form of life *has been* substituted for another, we must neglect and cast aside, as worthless *for that purpose*, the evidence of experiments in our laboratory, and examine only those cases in which such substitution has actually taken place, and try to find out a cause from them—and thus test Mr. Darwin's theory. No part of that theory commends itself more thoroughly to scientific men, than that in which he bravely and most logically applies it to man. It cannot be seriously disputed, that man is in a great measure the creature of the circumstances that surround him, and that he is much less of a free agent in a great many turns of life, than was dreamed of in the days of the old philosophy; and especially is this true of man in a savage and barbarous condition. A civilised man can and does, in a great many ways, baffle the adverse influences that obstruct him. He can carry food with him to the desert, and make that desert habitable; but with the savage the case is different, with him

it is the same as with the lower animals. He is controlled very largely by the physical conditions that surround him. *Æsthetic* people who join the Alpine club, or hire yachts for cruising in the Greenland seas for the purposes of photography; benevolent people who go to Africa for the benefit of the black races (all honour to them), and *blazé* people who exchange coronets for seamen's clothes, and live the life of drudges behind the mast for years, are curiosities, but not very natural products of human caprice.

To the Esquimaux and Laplander it is a matter of profound surprise that men should be found willing to desert the sunny and abounding countries of the south, and to travel to their deserts, and they can scarcely overcome suspicion that some deep plot, or some folly does not underlie it all. They can understand emigration, when a country has become unendurable, because of the increasing rigour of the climate, the difficulty of getting food, or the redundancy of the population. Emigration then becomes a necessity; and although patriotism and love of country be virtues that develope in the inverse ratio of the pleasantness and ease of living, and like dogs, men become attached by misfortune, and by trouble, and a hard life to inhospitable homes, far more than by sunshine and ease, the limit is sometimes reached when they must go; just as the same limit is reached in the case of the migrating lemming and buffalo, the herring and the locust; and surely these external operating causes have been at the bottom of most of the great race migrations. Thus the Esquimaux have recently left large districts in Smith's Sound and the Arctic Archipelago, because of the encroachment of the ice, which in many places now occupies ground formerly more fertile and once thickly peopled. In Labrador, the Indian population has very largely migrated, and almost deserted the country, because the burning down of large forests has destroyed the game upon which they fed. Just as many hunting tribes of Indians in the interior have entirely changed their habitat, because they have had to follow the buffalo where he is to be found. The dreadful desiccation that is going on in the Kalahiri desert, in South Africa, has starved out the greater part of the bushman population, to receive tender mercy at the hands of the encroaching Boors.

It was the invasion of the sea that forced the Cimbri, according to their own account, to migrate; as it was some other natural phenomenon that eventually compelled the Avares to do the same. Biarmia, once a flourishing province, has become depopulated because of the increasing rigour of its climate. The potatoe famine drove the Irish in swarms across the Atlantic. It is the teeming homes and the vast fertility of the

population in England and in Russia that has forced the peopling of vast prairies in America, and river valleys in Siberia, just as the same cause probably drove the Norsemen to their well-known migrations; and so I might continue; and these facts show, that although the civilised man is more independent of circumstances than the savage, notwithstanding some superficial difficulties, both are subject to one general law, namely, that when one race of man invades and occupies the area previously occupied by another race, he is forced to move by some external pressure. Not only so, he is only one unit in a migration which affects the lower animals, and the plants as well. He is generally the precursor of a migration by which not only the race of men is changed, but the greater part of the fauna and flora are changed also. I shall revert to this presently. Meanwhile, let me deal with a superficial difficulty. The tendency in civilised countries seems to be to treat all plants and animals that do not minister to the wants or pleasures of men, as weeds and vermin, and it may enter into the dream of some philosophers, and with very great reason too, that when the whole earth shall be tenanted by a highly cultivated race, all the plants and animals which do not fulfil these objects will be eradicated, and we shall be living in an æra marked, palæontologically, by the remains of such men, and the animals and plants useful or pleasing to them only.

This utopian dream ought not to blind us to the real issue. If we examine the problem with some attention, we shall find that man's will has less to do with it than might be supposed. We shall find that although he carries his bees and cattle with him, that even when the migration has taken place in the most artificial way, namely, across a wide ocean, the vermin of his own country travel with him—the fox and the rat, the cabbage butterfly and the thistle have also migrated despite his efforts, and where the migration has not been so artificial, namely, when it has taken place across the land, that man has only been a unit in it, and that the fauna and flora of one area have been bodily transferred to the other.

The ethnology of Asia (north of the Himalayahs and of Persia), and of Europe has been the subject of my special study for some years. The one grand fact which underlies the very puzzling migrations of the nomadic tribes that occupy a large portion of this area, is the uniform migration of one tribe after another, from north-east to south-west. The only exception being the sporadic migration of the Slaves from the ancient grand duchy of Muscovy. Putting this aside, the persistent direction of the migration has been very remarkable, and it has been, so far as we know, from the earliest times.

Here then we have a notable instance of the invasion of an ethnological province by the inhabitants of another, proceeding with a constant and continuous flow, and in order to trace back the stream, we have merely to unpeel, if I may use the phrase, the various layers of population that cluster round the Caucasus, or are to be found in the west of Europe, as we would unpeel an artichoke, until we arrive at the primitive, or rather at a primitive type. We may have no actual chronology at present as to many of these movements, but we cannot mistake their sequence, and in following their sequence we are adopting the historical method. Whether we depend upon the evidence of anatomy, or upon that of language, or upon that of art, and art remains for discriminating our types, we shall arrive at the same results—results which are far more satisfactory than *à priori* theories, or merely experimental conclusions. We can do this with man. Now, as I have already said, man is only a unit in such migrations. Let me cite a few examples.

To begin with the domestic animals. It is too much the fashion to treat our different breeds of domestic animals as products of the skilful breeding of our stock-keepers. The latter have caused some improvements in shape and other features, but they have done little to create really new types. It is a question which weaves itself very intimately with ethnological reasoning, but which has been hitherto much neglected in this country. Rutimeyer and others have had it too much their own way. Mr. Boyd Dawkins has shown reason for believing that the small black cattle of Wales and Ireland are descended from the *bos longifrons*, and further, that this *bos longifrons* was never wild in Britain, but was the domesticated cow of the Celtic and Roman inhabitants of this island. It is not found in the pleistocene deposits, and first appears in prehistoric times with the bronze using people. He has named it the Celtic shorthorn. During Celtic and Roman times, no other cattle appear to have existed in Britain than the small black shorthorn.

On the decay of the Roman empire in Britain, we find the northern parts of England occupied by a race which has not yet been properly discriminated. It is known in literature by the Arthurian legends, the poems of Merlin, etc., and quite a different set of traditions to those of the Roman provincials of either Gaul or Britain. It is known archæologically by a very unique and peculiar style of art, which has been especially studied by Mr. Franks, and which is known as neoceltic. I quote it, because with it apparently is associated the introduction of the semi-wild cattle with red ears, so much bepraised in the legends of the northern Welsh, whose laws fixed such a white cow as being worth one-and-a-half black ones, which once in-

habited the great northern forest, that stretched with unimportant breaks from Chillingham to Lyme in Cheshire, which was kept in the mediæval granges attached to the abbey of Whalley, and was hunted by the mediæval sportsmen, as many notices testify. In them they were styled bubuli and wild cattle. I believe no traces of it have been found in purely Celtic or Roman burials, and it would appear from all the evidence to have come in with the neoceltic folk. With the Teutonic peoples are especially associated the red cattle. In the Hebrides and other Western Islands, where the Norse element was the strongest, we have the so-called Scotch cattle in their greatest purity, and I learn from connoisseurs and natives, that the pure and proper colour of the Highland stall is russet and yellow red.

In Devonshire we have the same small red breed, only in a more cultivated condition, while on the border of Wales we have the Herefords, which would seem to be a cross between the white and red races. Mackenzie says the cattle of Iceland which must have been introduced by the Norsemen are very like the Scotch cattle, except that few of them have horns. Colour of hair has been deemed a sufficiently constant element in races of men to found distinctions upon, as for example in Professor Huxley's recent re-arrangement of Blumenbach's "*Ethnography of the World*", but this element has been much neglected in classifying cattle, although quite as constant in them. To proceed. The Lancashire long horn has given way quite recently and almost disappeared. It has been displaced by the short-horn, not an improved strain of its own breed, but an invader from the north of Yorkshire and Durham. This again has been traced across the sea, and is probably the same as the big Holstein breed. This is a very bald summary of a very interesting and difficult question, which would I think well repay investigation. I quote it first to show that much which is popularly assigned to the breeder has a more remote origin, and further to show that when one type of ox has been supplanted by another it has not been by the creation of a new type by means of selection, but by the invasion of one area by the type existing in another, an invasion generally coincident with a human revolution of the same kind. What is true of the ox is true also of the sheep. I was told in Scotland that the four horned Highland sheep has almost disappeared, and is only to be seen in remote parts of Skye, etc. It has been displaced by the Cheviot, as the Highlandman has been dispossessed and had to migrate in great numbers and been replaced by the Lowlandman. The breed survives in out-of-the-way corners and also in Iceland. Sir George Mackenzie thus speaks of it. "The sheep of Iceland

appear to be the same as the old Highland sort, which is now nearly extinct. Many of them are entirely black, and a large proportion black and white." ("Mackenzie's Travels", 281.) It would seem, therefore, that the primitive breed of sheep as well as cattle in western Europe was black. Columella described long ago how the *black* rugged sheep of old Spain were improved (not by selection) but by the importation of Sardinian rams.

The old long-backed wiry big breed of pigs have been thrust aside in many places by the fat little breed which was, I believe, imported originally from China. I need hardly refer to the cases of dogs. How the pointer came from Spain, the smooth greyhound from Italy, and so on, or go over the list of fowls' names, which themselves show the many quarters of the globe whence they came. I shall consider how these varieties probably arose in the next paper, the moral I am pointing with them *now* is that as they exist in England they prove the migration of domestic races of animals, and are not instances of selection. Examples may be quoted from barbarous and savage no less than civilised life. Thus the invasion of the Kalmucks into Europe brought the Bactrian camel into Russia. The Esquimaux and the Indian tribes take their dogs with them when they migrate. The eastern mountain range of Manchuria has within the last two hundred years been occupied by nomadic Tunguses called Oronchi. With them the same mountains have been invaded by the reindeer. On the banks of the middle and lower Lena live the Turkish tribe of the Yakuts. They are an intrusive race, and only went there recently. Travellers describe their tradition, how with them went their herds and horses, and that now the Yakut cattle and the white Yakut horse are a distinct feature in the country, and so I might continue. The history of domestic plants is the history of the introduction of the products of one country into another; we have certain cases of the improvement of indigenous wild stocks, but these are a very small proportion; *ex. gr.* the almond and the peach came from Persia, the damson plum from Damascus, maize and tobacco from America, six-rowed barley, I believe, from Egypt; and so I might fill volumes with the tedious list. Corn was probably imported into Central Europe with the Arians when they came from the Thibetan highlands, just as it crossed the Indian ocean to Australia and the Atlantic to America with the same race. As the balance of evidence goes to show that the restless Arabs imported the silkworm into Europe, they also probably brought the mulberry and the Tangierine orange.

We thus see that each race of invaders has been accompanied by a different breed of domestic animals, each breed successively and more or less displacing a previous one. If we extend our view

somewhat beyond the historic period into prehistoric times we shall find that the gradual invasion of Europe by the Arians, who hailed from the highlands of central Asia, was coincident with the displacement of the fauna known as prehistoric by a fauna whose original home was the cradle of the Indo-European race. We shall find that the various domestic animals and plants that came in with the Arians are properly indigenous to the highlands of Thibet and their surrounding country, the homeland of the Arian people. We shall find also, that as the previous inhabitants of Europe were driven into the mountainous and uninviting corners of that continent, so also were the characteristic animals of the earlier period. The elk and the bison into Lithuania and the Caucasus, the wolf and the bear into the Pyrenees and the South German forests, the reindeer into Scandinavia, etc. The latter class is now rapidly diminishing, and will probably soon be gone, and we shall have in Europe a fauna which has not been developed by any natural selection, but has come in as an invader from another area altogether, and has monopolised it. This is by no means confined to Europe. In Australia the kangaroo is giving place to the sheep, the emu to the turkey and goose. The parrot is gradually retiring before the sparrow, the ornithorhyncus before the rat, the bee and the cabbage butterfly are evicting the indigenous insects, and very probably before long the salmon and the European silurus will have replaced the native fishes. In Canada, the moose and the glutton are disappearing before the fat beeves and shepherds' dogs. At the Cape, a very diversified fauna has been almost eradicated contemporaneously with the disappearance of the Hottentot race. On the river Plate, vast herds of horses and cattle now pasture the formerly almost deserted pampas. In all these cases the Indo-European race has invaded fresh areas, and its advent has been the signal for a great revolution in the zoology of those countries, in which the ancient animals have been replaced by others having an entirely different pedigree. The same law holds good of plants. We are now witnessing in Lancashire the progress of one of these botanical revolutions, the yew, the oak, the ash, and the hazel, which formed the woods of mediæval times in that county, and whose remains are turned up in almost every bog, these are rapidly disappearing and giving place to elms, sycamores, beeches, and limes. These latter are comparatively recent migrants into that cold and damp county, and are not to be found in the few shreds of the old self-planted woods that still remain in retired corners. This is only a portion of a much wider revolution which has been examined by Sir Charles Lyell, the Danish antiquaries, and especially by Mr. Jones, in an essay printed in the "Geological and Natural His-

tory Repository", vol. i, 73, from which I shall freely borrow. Speaking of the well known succession of the pine, the oak, and the beech in Denmark as marking roughly the stone, bronze, and iron periods, he says, the earliest of the Scotch firs grew in Denmark subsequently to the glacial period and to the formation of a considerable depth of peat. It often attained three feet in diameter there, which proves that the soil and climate were well suited to it. The tree is not now a native of the Danish isles, and when introduced there has not thriven, although evidently indigenous during the human period. (Lyell's "Antiquity of Man," 9.) With this tree have been found remains of the Norway spruce fir, the white birch, the aspen, and the hazel, all of which are still its companions in the forests of Norway, from Christiania to Drontheim, and even further north. It grows best and attains the greatest size combined with strength and durability in high latitudes, or at corresponding altitudes on mountains. In great Britain it only attains full dimensions and perfection in the Scotch highlands. The Pyrenees are its southern limit.

Fragments of fir probably of this species have been found in a peat bed overlying the boulder clay at Hoxne in Suffolk, others have been found in a similar peat bed at the mouth of the river Cauche, which falls into the sea not far from the embouchure of the Somme. (Lyell, *op. cit.* 168, 169.) Again, "No tree now grows in Orkney or Shetland. The only ligneous things that do grow are the *cetula alba* and common juniper, both merely existing as shrubs; but at six feet beneath a peat bog, trees, branches, leaves, and cones ascribed to the silver fir have been found. One tree in particular of six feet in circumference and forty feet in height being recorded by Mr. Edmonstone as having been found in peat in Shetland. (Murray's "Geographical Distribution of Mammals", 40.) In regard to the species of *abies*, Mr. Jones goes on to say, that although their wood is said to occur abundantly in our ancient mosses, it is not a little singular that a reference to the commonly consulted botanical works of the day will go far to confirm the correctness of Cæsar's statement that of the trees found in Gaul the *abies* was wanting in Britain, as of all the species now cultivated in this country not one is claimed as indigenous. (Jones, *op. cit.* 75). Here then we have the disappearance of a whole botanical facies, namely, that of the linear leaved trees from very large areas in Europe; and as the evidence of the Danish bogs where the remains lie over one another in regular succession just showed us, they were succeeded by a facies of palmate leaved trees, oaks, etc.

It is interesting to travel somewhat further to the east and to see this very same displacement of the pines and firs by the

birches, etc., going on at the present moment. I shall extract from the pages of that most admirable traveller, Erman. Speaking of the predominance of the birch in certain parts of Siberia, he goes on to say: "A story handed down from the Mongolian aborigines is still currently received here to account for this striking distribution of forest trees. My Kosak's narrative was to this effect: the Buraets (Bratskie) were forewarned of the coming of the Russians by a miraculous event. A growth of white trees, birch, had suddenly sprung up and displaced the black or pine forests, an omen that the swarthy natives would fall under the yoke of the fair Russians. This tradition is preserved even in the written chronicles of Siberia, and is further elucidated by the fact which I first became acquainted with among the Ostyaks of the Obi. *In every instance where the linear-leaved genera of trees have been destroyed by fire, it has been remarked that they have been succeeded by those with expanded leaves.*" (Erman's "Travels", ii, 157.)

Here we have therefore, apparently, examples of a general law affecting the displacement of one set of forests by another of an entirely different genus, and found to apply to Britain, to Denmark, and to Siberia, a displacement concurrent in native tradition with a similar zoological revolution affecting man as well as the lower animals. The process is anything but that of natural selection. There is no gradual development of one form of forest tree from another, but the sudden disappearance of one form and the as sudden appearance of another entirely different and entirely unconnected with it. Further, there is no struggle, no elbowing out, but the decay and death of the one followed by the appearance of the other. Let us continue. When the firs and pines disappeared they were replaced by oaks and ashes. Such is the succession in the Danish bogs—such is the succession also, as far as we can make it out, in Britain. Sir Charles Lyell says: "It appears clear that the same Scotch fir was afterwards supplanted by the sessile variety of the common oak, of which many prostrate trunks occur in the peat at higher levels than the pines, and, still higher, the pedunculated variety of the same oak occurs with the alder, birch, and hazel. Other trees, as the white birch, characterise the lower part of the bogs, and disappear from the higher, while others again, like the aspen, occur at all levels, and still flourish in Denmark." (Lyell, *op. cit.* 9.)

Again, in the crannoges of Ireland, all the platforms are made of oak, so was the old log cabin found at Drunkelin, surrounded in the latter case by the stumps of the oak tree. The canoes also found there were of oak. As Mr. Jones suggests, if the fir had then existed in any quantity, it would assuredly have been

used for these purposes. The texture of the wood was not a matter of indifference when it had to be hewed with stone axes, and "the felling and splitting into planks of pines and firs, and the hollowing them out into canoes would have been comparatively easy, and we may reasonably conclude that when oak was used the wood of those trees was not immediately available. The oak vegetation continued in Denmark down to the close of the bronze period. It was succeeded by the beech forests, which coincide roughly with the iron period." In the time of the Romans, the Danish isles were covered as now with magnificent beech forests, yet, in the antecedent bronze period, there were no beech trees, or at most but a few stragglers, the country being then covered with oak. In Britain, the beech was probably a later introduction, for Cæsar mentions that in his day it was not known here; and, as Mr. Jones says, no mention is made of it as occurring in any of the geological formations with other trees now growing here. We have reason to suppose that it is a comparatively recent addition to our sylvæ as well as to that of Denmark, and that it never flourished here in any previous epoch to the present (*op. cit.* 78).

These cases of the forests are amply supported by the humbler plants. Is not the native brush of New Zealand, which is ruthlessly swept away by the settlers' fires, replaced by thistles and other European weeds, just as rye grass and clover are thrusting out the old prairie grasses of America. Have we not seen, even in a few years, large tracts of heath disappear, not by cultivation, but died out, as it is dying out in many parts of Lancashire, and being replaced by the bent grasses, etc.

Nor is the revolution at all limited to one area. Thus, Raggewin, in 1722, described Easter Island as full of trees which were in full fruit. Such trees are not now known there; but Mr. Palmer tells us that he saw boles of large trees, *Edwardsia caco-palm* and *hibiscus* decaying; while, from the size of some of the paddles and rapas, large trees must have once existed, while now the only approach to wood is found in the sheltered nooks, where bushes of ten and twelve feet high, of *hibiscus Edwardsia*, *Broussonetia*, etc., are to be found. Their rate of growth is very small. ("Journal Geographical Society", ii, 167 and 168).

In Mr. Bennett's "Journal of a Voyage Round the World," speaking of Tahiti, he says: "The guava shrub has overrun Tahiti in spite of every attempt to check its increase. Woodlands and bush for miles are composed solely of this shrub, which bears a profusion of large and delicious fruit. It was only introduced some twenty years ago (*i. e.* 1813-1816) from Norfolk Island. (Same Journal, vol. vii, 225.) This is almost a

parallel to the terrible invasion of the Cam and other rivers by the American water-weed so innocently introduced by the botanical professor.

These examples will suffice to prove that what is true of animals is true of plants also, namely, that when one type is supplanted by another, in a very great number of cases, it is not by the evolution of a fresh type from the old inhabitants by means of natural selection, but by the invasion of one area by the inhabitants of another. This is true of such cases as we can test as in progress now or recently; and if we search the geological record, and if we find there that after a certain time the fauna and flora of an area are suddenly changed, that successive strata are filled with the wreckage of entirely distinct faunas and floras, we shall be driven to the conclusion (tentative, perhaps, but the best we have), that the same law held good in all time, and that types then, as now, were supplanted in the main by types coming from other areas, and not by the evolution of fresh types from their own body. We will next inquire a little more closely into the *modus operandi* of this change. Putting aside the artificial conditions induced by civilisation, we shall find that the decay of one type and the aggrandisement of another are more closely co-ordinated than we might expect, and that both are probably due to an alteration in the climate and other life conditions in a country.

Let us begin with some very superficial and easy examples. It requires no philosophy to prove that what the strong covet and the weak cannot protect must eventually go to the strong. Nor does it need any philosophy to prove that where one race evicts another that it must be endowed with the balance of advantages in the struggle. The North American Indian and the Indian of the Spanish main have been driven out and destroyed in large areas by the white race of Europe, whose greater vigour, whose rifle and whose skill in war, *it is said*, have been too much for him.

The same is true of the Carib population of the West Indies and the Guanches of the Canary islands. In Australia Christian people in the bush are in the habit of hunting down the black man as they do kangaroos, a species of sport which seems also to have been favourably patronised by the Boors in south central Africa, who are making short work of the few remaining Bushmen (if they still survive). The Chinese have done the same good office for their barbarous relatives, the Miautze. The Maories for the previous occupants of New Zealand, a few of whom remain in the Chatham islands. The Mongols desolated whole empires and destroyed hecatombs of people in their invasions in the thirteenth century, and so we might continue.

The forcible supplanting of one race of men by another is an elementary postulate of history. These invasions by man have led to the destruction of large numbers of wild animals. We know how the wolf, the bear, the wild boar and the golden eagle have been extirpated from Britain. The books are too numerous on our shelves which describe the butcheries committed upon the South African animals, upon the American buffaloes, etc., etc., by benevolent sportsmen. While naturalists are proverbial in their greed for acquiring dried specimens to feed their moths upon, for their apt and cunning skill in exterminating rare animals and plants. Nor are civilised men alone in these feats. The New Zealand Maories are, according to the best authorities, a recent race of immigrants from the Sandwich Islands. With their arrival it is generally held that the doom of the great apterous birds of New Zealand was sealed, and that their greater skill and power led to the destruction. The Russian sealers are credited with the destruction of the Sirenia, etc., etc. Nor, again, is the feat confined to man only, the brown rat of Norway is supposed to have forcibly ejected the European black rat. The red-legged partridge has done the same for the English grey partridge in many districts, and so on. These and such as these are triumphantly quoted as instances of how a vigorous type has elbowed out a weaker type; but granting this to be so, it is anything but a support to Mr. Darwin; there has been no natural selection from the inhabitants of a country of a stronger and more vigorous element, but a displacement by strangers.

But it may be that in granting this we have granted too much. This method of displacement appeals at once to our casual observation, and we are apt to be misled into making it much more potent than it really is, or rather in mistaking one of the effects for the cause. The fact is, that when the invasion of one zoological or botanical province by the fauna and flora of another takes place, the original tenants have already begun to decay. It is an article of belief with many ornithologists, that the great auk disappeared entirely because of the ruthless conduct of the cod-fishermen, etc.; but the great auk that was killed so rapidly on the islets off the Labrador coast was only the expiring remnant of a bird that had a very wide range. Its remains have been found on the islands skirting Greenland, and other Arctic coasts where the ruthless fishermen have never been. There it has disappeared from some more remote cause than the destructive propensities of man. The same argument applies to the sirenia, whose romantic story has furnished material for so many Russian essays from the days of Steller to our own. The whale has deserted the shallowing coasts of Siberia and much of the Arctic borderland, not because of man's persistent persecution, for he could

hardly navigate the areas I refer to, but because of the gradual rise of the sea bottom and the shallowing of the water. The dodo was finally killed off by the Dutch, but we know that long before the Dutch knew the Mauritius, the islands of the Western Indian Ocean had lost several of their birds near relatives to the dodo, and that it was only an expiring fragment of an extensive avifauna that had passed away, and in searching for a cause we find the most probable one to be, that a vast continent has here sunk beneath the waves leaving only a few detached points above water, whose scanty surface typified the decay and disappearance of many forms of life, not by the mutual struggle of individuals but by the more potent cause of the invasion of the land by the sea. We cannot point our moral better than by instancing also the celebrated Californian big trees, and the solitary specimens of certain Baobabs and other African trees (the Dragon tree of Teneriffe being a notable example) which remain mere echoes of the world of yesterday. When naturalists and other destructive creatures shall have felled these relics, and hung and dried and labelled them in museums, *we* shall consider that they have merely finished the work which was already nearly complete, and shall by no means charge them with the heavy crime of having been the sole authors of the work. On turning to man, we find much important evidence on this subject. The Polynesians are rapidly disappearing from the South Sea islands. The census of several of them by the missionaries shews how frightfully they have diminished since Cook's voyage. In this case there has been no savage uprooting and killing, as in Australia and the Western States of America; but rather much fostering care on the part of the missionaries. Among the Indians of California the same result has taken place, and so elsewhere. Let me quote a passage or two. In some notes on Upper California by Mr. Coulter, in the sixth volume of the "Geographical Journal," he says:—"In Upper California the aboriginal inhabitants have diminished considerably, though in this case one would suppose they ought at least not to have lost ground, not having been driven from their homes as in the United States, nor having had ardent spirits at all within their reach until lately." Mr. Coulter then proceeds to shew, as I pointed out in the previous paper in the case of the Maories, that this gradual extinction is accompanied by a great diminution in the relative number of women to men. Again, in speaking of Pitcairn's Island, Mr. Bennett in the seventh volume of the same Journal, page 213, tells us there were inhabitants there before the mutineers from the "Bounty," skeletons and stone remains of an extinct race have been found on the island. Mr. Bennett not unnaturally is led to inquire what causes can have operated to extinguish this race in such a fruitful island, and

concludes that it was one of the epidemic diseases that occasionally scourge the Pacific islands. Here we meet with a cause of extinction which has been potent indeed, and which has been very much neglected so far as my knowledge goes by Mr. Darwin; but before treating of epidemics, let us consider a curious instance as a type of another class of cases.

The conditions under which animals thrive have never been treated in a scientific manner. Such a problem as the existence of the mammoth in Siberia has been treated in an extremely empirical manner. One school of writers will have it that the Mammoths must have lived in the subtropical parts of Asia, and been floated by the northern rivers to where their carcasses are now found. Another set of inquirers point to the researches of Middendorf, and others to prove that the mammoth lived where his bones are now found; but the inquiry into the question of the conditions under which a mammoth, a hyæna, and a reindeer could live together has, if I am not mistaken, never been adequately made, and before it has, it is absurd to deal with the smaller question. Let us begin with the reindeer. Why will not the reindeer now live in Scotland? The attempt to introduce it has been made more than once, the experiment has been described in considerable detail in Mr. Arthur de Capell Brooke's "*Travels in Lapland*," 76, *et seq.* *Inter alia*, he says:—"The reindeer moss, contrary to expectation, was not only found abundantly in Scotland, but in most parts of England, particularly on Bagshot Heath, while the climate and even latitude of Scotland did not materially differ from the part of Norway whence they came. Notwithstanding these favourable circumstances, they died one by one, till I believe none remained in Scotland." It cannot be that the moss is not of the same quality, for, as Mr. Brooke says, the reindeer is by no means particular; it eats the leaves of the birch, sallow and aspen, particularly the former, and browses also upon the young herbage and the tender shoots of the mountain shrubs. He gives a long list of the plants upon which it habitually feeds in summer (*op. cit.*, 88 and 89). He also tells us that it is sometimes fed on hay in the winter. In this he is supported by Mr. Laing, who says, that it eats grass and hay as well as moss. It lives on moss because there is nothing else to live on in the Fjeld ("*Residence in Norway*," 264). There is, therefore, no reason in regard to its food why the reindeer should not now live in Scotland. On turning to Iceland we have a different tale to tell, twenty-four does were embarked from Hammerfest in Finmark for that island. They succeeded very well and were soon so abundant that Sir George Mackenzie, in his work on Iceland, says, they are not unfrequently seen there on the mountains in herds of sixty or one hundred together. It is more pertinent

and remarkable that in Scotland the reindeer existed in comparatively recent times. One of the Norse Sagas mentions the hunting of the reindeer in Caithness; and this allusion, which alone might be suspected, has been amply confirmed, as I have the authority of my friend Mr. Boyd Dawkins for saying, by the discovery of the broken bones of reindeer in the refuse heaps of the Pictish burghs.

It is clear, therefore, that some change has occurred recently in Scotland adverse to the mode of life of the reindeer. The obvious cause of this, at first sight, would be said to be that the reindeer thrives best in the coldest and most exposed situations. That Scotland and southern Norway are too warm for it, while Spitzbergen, Greenland, and Siberia are its more natural habitats, and this proves in some measure to be confirmed by the fact that reindeer formerly in not remote times lived in Scotland, at a time when we have many reasons for believing the climate there was much more severe than it is now. This view would be partially, but only partially correct. Mr. Capell Brooke tells us that at the same time when the imported reindeer were dying in Scotland others kept in confinement and experiencing the very opposite reverse to their former mode of life, not merely survived but remained healthy and vigorous, withstood the effects of a London season and an atmosphere most unusual to them, that of a room frequently crowded to suffocation, (*op. cit.* 79.) Reindeer thrive in the mountains north and east of Manchuria, a comparatively temperate region, and lived until quite recently, if not now, in the southern Urals. On turning to Mr. Laing's most admirable narrative of a residence in Norway I find the following passage, which I believe solves the difficulty. Speaking of the hair and skin of the reindeer, he says, the former does not throw off wet well, and even parts from the skin after any continuance of moisture. With our damp climate and wet ground, the animal would be drenched through the hair to the skin for weeks together, and would die of cold or rot, as our sheep often do in wet seasons. In Norway the heavy rains occur in spring or autumn, at which seasons what is rain below is dry snow higher up in the Fjeldes. Our highest hills do not afford in summer this kind of refuge from rain and damp to an animal whose coat keeps any degree of cold, but will not stand continued moisture. (Laing's "Residence in Norway", 264.) It is the damp of our latitudes nowadays that the reindeer cannot endure. It is strange that no use has been made of this fact hitherto in zoological reasoning; for it is a very potent reason why so many foreign animals die here. In our menageries the beasts do not suffer so much from cold and other assigned causes as from damp. Diseases of the lungs are the scourges

of such establishments, and these induced not by cold but damp. The camel, the tiger, etc., can endure the exceedingly bitter cold of the Thibetan plateau with impunity, because the cold is a dry parching cold. The lion, which lived in historical times in the rugged mountains of Thrace, need not fear the cold of our winters, but may well dread our damp seasons, which make such havoc even among our acclimatised people. That our climate has grown damper is probable from the contemporaneous extinction of the spruce fir with the reindeer, the former of which, as well as the other linear leaved trees, according to Ermann, especially likes a dry air. Such climatic changes would probably be first felt by the vegetation, and what affects it would naturally affect the animals feeding on it; and here we get to another cause of the extinction of certain types. With the disappearance of the forest, the forest animals disappear too, notably, the elk, the sable, etc. Let us now turn to the more obvious and patent destruction of types by epidemics, etc.

Few subjects of equal interest have received as little study as the curious and well-attested fact, that when small island communities are visited by strangers, although the latter may be in perfectly good health, the former are at once seized with complaints of various kinds, severe catarrhs, etc. The fact has been observed and commented upon not only in the Pacific islands, but so near home as St. Kilda. The very arrival of the invading colony being a danger to the indigenes. If this be so when the invaders are well, it becomes much more terrible when they are partially infected. Once Iceland was a thickly peopled and prosperous island. The story of its depopulation is not a bad type of other areas. "The eighteenth century was ushered in," says Sir George Mackenzie, "by a dreadful mortality, consequent upon the small-pox, which in 1707 raged with such epidemic violence as to destroy more than sixteen thousand of the inhabitants. The years between 1753 and 1757 were very inclement. The cattle perished in vast numbers, and a famine carried off nearly ten thousand people. In 1783 a terrible eruption occurred, in which more than eleven thousand people perished." Such ravage in such a harsh climate and position necessarily tends to the extinction of the inhabitants, and we cannot doubt that the once teeming cities of Mesopotamia and Persia were to a great extent cleared out by such visitations.

In reading the history of Asia and of America, there is no more painful chapter than that which deals with the ravage caused by small-pox, etc., among the indigenous tribes before the actual occupation of their territories by the Russian and Anglo-Saxon races. Let me quote a few examples. The Esquimaux are a race rapidly being extinguished by the small-pox. The

various accounts of Smith's Sound and other arctic districts speak of the great number of ruined huts, etc., existing in areas now nearly deserted by Esquimaux, while the burden of the tale is the same everywhere. Alas, said the Esquimaux Kalutunah to Dr. Hayes, we will soon be all gone. I told him that I would come back and that white men would live for many years near Etah. "Come back soon", said he, "or there will be none here to welcome you." Their number had greatly diminished since Dr. Kane was there. ("The Open Polar Sea," 386.) But the fact is confirmed by every Arctic explorer.

Franklin and others have told us the story of the depopulating of the Hudson's Bay territory, not by English muskets, but by the small-pox. The same is true of the Indians of the western prairies, of those west of the Rocky Mountains, of the Kamtkadales, of the various Siberian tribes, in fact, if I were to empty my notebook of its authorities, I might quote them from nearly every part of the world, and quote many cases where tribes like the Yeiniseians have actually been swept right out and only a few straggling individuals left. The small-pox is not alone in this, the whooping cough and measles have been almost as destructive in South America and the Pacific. The plague has gone before the white man and swept a clean road for him, so that when he has gone in to occupy he has had no struggle with another race, he has merely killed off the last perishing remnants of it and occupied its country. Is this natural selection by the mutual struggle of individuals, or an illustration of a deeper law by which one type disappears and is replaced by another from a foreign country? I cannot see the selection, for mark a curious fact hitherto unrecorded so far as I know. The small-pox, the cholera, etc., etc., have not carried off the weak and decrepit mainly. These generally survive the attack. In my own village, we have recently made an elaborate examination of every case during the epidemic, and we find that it was the strong, and hearty, and vigorous who died, like rotten sheep, while the sickly and weak recovered. This only confirms the fact that it is not in civilised communities, where man's physical qualities are so materially weakened, or in the population of our large towns, that we must search for proofs of the awful fatality of the small-pox, etc., but among the Tartars of the golden horde, the Siberian tribes, the Indians and Polynesians, the heartiest and strongest, and, generally speaking, healthiest of men. If, therefore, it be claimed paradoxically that this process of extinction is an element in natural selection, a claim which I can hardly credit will be made, I may at least add this to the cause urged in the previous paper of this series, which is constantly operating to reverse Mr.

Darwin's hypothetical law that the weak and decrepit are constantly being elbowed out by the strong. I have drawn attention to the effects of epidemics in extinguishing types of man, but this devastating of whole tribes and races by epidemics is by no means a mere human infirmity. The cattle plague, and other similar visitations, bear testimony to its being a much more general cause, one, too, affecting not only domestic animals, but wild ones also. When the epidemic carried off the Esquimaux, a contemporary attack also prostrated and killed their dogs. I find the following passage about the beaver of America in Richardson's "Northern Zoology." "In some seasons a great mortality occurs among the beavers from some unknown cause, many being found dead in their lodges."

It is not very long ago since our moors were devastated by the grouse disease. Still more lately the mortality of guillimots and razor-bills all round our coasts was the subject of much correspondence in the papers.

In King's Travels in Siam and Cambodea, "Journal of the Geographical Society", xxx, 181, it is said wild animals of the country are not so numerous as might be supposed. *The natives say that twenty years ago an epidemic swept off immense numbers of them.*

In Hayes' "Open Polar Sea", p. 196, I find this sentence:—"Disease had been for several years prevailing among the dogs of southern Greenland, and a large proportion of these useful animals had fallen victims to it. The cause was not determined, but he had reason to believe it was of local origin." Again, p. 260, an Esquimaux chief complained to Hayes that "Death had made fearful ravages among his people since I had seen them five years before. He complained bitterly of the hardships of the last winter in consequence of a great deficiency of dogs, the same distemper which swept mine off having attacked those of his people. *Indeed the disease appears to have been universal throughout the entire length of Greenland.*"

Mr. Owen kindly favoured me with the following note:—"Up to 1845, the wild pig was swarming in the Rohileund Terrain. When I went into that jungle in 1846, I only heard of two litters in the whole district I visited, they died out, so it was said, from a disease of the foot."

There are some cases of extinction which seem referable to this cause alone: thus the weasel was once found in Ireland, it is there no longer. It cannot have succumbed to a struggle for existence, nor are Irish gamekeepers cleverer at exterminating vermin than English ones.

Epidemics are not confined to animals, they also attack plants. The potato disease, the rust in corn, the blight in apple-trees, -

are familiar cases among domesticated plants. Not long ago whole forests of larches in Scotland were stricken with disease and died; and if our examples are few, it is partly because our time is short and the subject has not been much studied. With the disappearance of the forests the forest creatures go too. It has been noted, both in America and Siberia, that the burning of forests has caused the desertion of large tracts of country by the elk, the sable, etc., and that these animals have returned again with the growth of the young trees. I believe that the chief cause of the extinction of the Irish elk was the destruction of the forests which we know to have covered Ireland at one time. It was probably the same cause which extinguished the capercailzie in Scotland, where we know it was found in prehistoric times.

There is a vast revolution going on in South Africa just now, which is fast extinguishing large herds of wild animals. The whole country is rapidly desiccating, rivers and pools are drying up, and the great Kalahari desert is spreading its borders very rapidly. Moffat and Livingstone have both collected large stores of facts on the subject. I will quote only one or two examples. "At Lapepe and other places on the road to Lake Ugami, as well as in Damara land and other places, but especially in the territory of the Bakwain tribes, this desiccation has gone on. Such streams as the Mahalapi river and those at Lopelale and at Porapora pass are pointed out where thousands and thousands of cattle formerly drank, but in which water never now flows, and where a single herd could not find fluid for its support. The same cause is assigned for the desertion of many parts of Labrador by the fur animals. In the Kuruman river, fourteen miles below the Kuruman Gardens, places are pointed out as having contained within the memory of men now living hippopotami, and pools sufficient to drown both men and cattle, where not a drop of water now flows.

Again, the traditions of the natives point to a more remote period when the country was far more fertile and much better watered than now, when the Kuruman and other rivers, with their impassable torrents, were something to boast of, etc., etc.; and, to confirm this, immense numbers of stumps and roots of enormous trunks of the acacia giraffe are to be found where scarcely a living specimen remains; and in the dried up beds of many ancient rivers, positive demonstration is to be seen of the former fertility of the Bechuana country." Similar accounts may be found of the rapid drying up of North Western India, of Khorasan and its borderland, of Australia, etc., etc., with the same result, namely, the extinction of a considerable flora and fauna. We do not read of any struggle for existence by which

new types are evolved more fitted to combat with the new condition of things, but the utter extinction and depopulation of whole areas, and their gradual invasion by another fauna and flora.

The extinction of the crocodile and the hippopotamus in Palestine, are puzzling examples, so is the hecatomb of mammoths, rhinoceros, etc., whose bones fill the Siberian tundras, and who died when in good condition apparently, not in solitary recesses of the forest, like the elephants of Asia, but in herds. Here probably we must invoke the influence of some epidemic, unless the whole were drowned by some sudden convulsion by which the deserts that extend from the Caspian to Manchuria were emptied of their waters. In all these cases, nay, in every case I know, the extinction of species has not been due to the mutual struggles of individuals, but to some external widely operating physical cause.

I have now said enough for to-night. I have endeavoured to show, and I hope I have succeeded in showing, that when we leave the hypothetical cases and the empirical cases, which we have drawn, either from our *à priori* reasoning, or from our laboratory, and inquire into the actual cases which are occurring in the great laboratory of nature herself, we find that types of plants and animals are supplanted by other types, by no selection of survivors from a mutual strife among their members, but by the immigration of strangers and foreigners; and that this has probably been true of all time, and if so, I have called attention to a radical misreading of the evidence by the school of Mr. Darwin. I do not say that variation among individuals does not exist, and that types sometimes change insensibly. It would be monstrous to say so. I shall treat of this in my next paper of this series, on "Gradual Variations." But I say that in the great majority of cases of extinction of types which we can subject to criticism, the revolution has taken place through the operation of external cause, and not by natural selection.

DISCUSSION.

Professor ROLLESTON said that Mr. Howorth had very clearly shown that in many cases, species and varieties had come into the possession of particular areas by means, not of any change for the better in their own organisation, but of certain advantages which that organisation gave them when pitted against the earlier occupiers of the countries in question. But Mr. Darwin had never ignored these facts, and Mr. Howorth might see that in the case of one variety overcoming another variety of the same species, even on his own showing, the difficulty had been only put back one stage. For granting all his undeniable instances, one asked how had the one variety contrived to come to vary. Variation

within the limits of a species was a process which our lives were long enough to allow us to watch, and from what we did see of it, we reasoned to what, it was true, we did not see of the perfect manufacture of species. There were, he allowed, many facts in biology for which Mr. Darwin's doctrines had not furnished an explanation; such were the colouration of the eggs of birds and of the shells of bivalve molluscs.

The author replied and the meeting separated.

JUNE 17TH, 1873.

Professor BUSK, F.R.S., *President, in the Chair.*

THE Minutes of the last Meeting were read and confirmed.

The following presents were announced, and the thanks of the meeting voted to the respective donors; and a special vote was accorded to Mr. Winwood Reade.

FOR THE LIBRARY.

- From the AUTHOR.—The Darwinian Theory. By J. L. Laird.
From the INSTITUTE.—The Canadian Journal, vol. xiii, No. 6.
From the COMMITTEE.—Eleventh Annual Report of the Free Libraries Committee, Birmingham, 1872.
From JAMES BURNS, Esq.—Human Nature for June 1873.
From the SOCIETY.—Proceedings of the American Philosophical Society, vol. xii, No. 89.
From the EDITOR.—Cosmos (an Italian Geographical Magazine), No. 2.
From the SOCIETY.—Proceedings of the Royal Society, vol. xxi, No. 144.
From the EDITOR.—The Food Journal for June 1873.
From the SOCIETY.—Transactions of the Orleans County Society, vol. 1, Nos. 4 and 5.
From the ACADEMY.—Fourth Annual Report of the Trustees of the Peabody Academy of Science, 1871.
From the COMMISSION.—U. S. Sanitary Commission in the Valley of the Mississippi, 1861-66.
From the EDITOR.—La Revue Scientifique, Nos. 49 and 50.
From the ASSOCIATION.—Journal of the East India Association, vol. vii, No. 1.
From the EDITOR.—The Spiritualist, for June 1st and 15th, 1873.
From the AUTHOR.—The African Sketch-Book, 2 vols. By Winwood Reade, Esq.

FOR THE MUSEUM.

From LIEUT. HOLLAND, R.N.—Two Photographs of Ainos.

The President stated that he had received official letters of thanks from Henry Hancock, Esq., President, and Professor Flower, Curator, of the Royal College of Surgeons of England; Professor Rolleston of Oxford; Professor Humphry of Cambridge; and Professor Turner of Edinburgh, for the collections of Peruvian skulls presented to the Universities and learned bodies which those gentlemen represent, by the Anthropological Institute, on the part of T. J. Hutchinson, Esq., H.B.M.'s Consul at Callao.

The President read a note from Mr. John Treacher of Twyford, Berks, announcing that he had two bronze swords, found close to the Isis, at Sandford, near Oxford, under twelve feet of solid gravel. This was stated in reference to Professor Rolleston's exhibition of a bronze sword, found in the bed of the Cherwell, and the writer said that he should be happy to show them to any member of the Institute who wished to inspect them.

Mr. J. G. Waller, on exhibiting a series of bronze implements found in Kent, said

The bronze objects which I have the pleasure of exhibiting were found on Hayne's Wood, Saltwood, Kent, which locality has recently been discovered to have been a British camp, apparently forming one of a series overlooking the coast, doubtless for its protection, and in communication with that behind Folkestone, known as Cæsar's Camp, but of a similar character. They were found in the side of the vallum during operations of the branch-line of the Hythe and Sandgate railway.

The nature of the discovery shows it to be similar to many others disclosed at different times; and from the broken-up character of the objects, together with a number of rude ingots of copper found with them, was, without doubt, the site of a manufacture exhibiting appearances analogous to what we should see at any time in a founder's shop in Clerkenwell. The objects consist of celts, mostly in fragments, as also swords, daggers, lance-heads, gouges, and a few articles not so easily appropriated. Of the swords there are several different types—some fragments of the leaf-bladed form. The lance-heads may probably be referred to missile weapons, as they are generally of a small size. Of the celts, there are twenty-one, in whole or in part, but of no great variety of type. There is one chape of a scabbard, which is one of the least common of the objects; portion of a lance marked with concentric rings; another having the shaft ornamented at the base. Besides these bronze objects,

one small flint arrow-head (?) was found by W. T. Tournay, to whose courtesy we are indebted for their exhibition, at four feet beneath the surface. This may serve to show the great antiquity of the encampment, but it is the only example found.

Mr. J. E. Price, F.S.A., communicated the following note on a discovery of old pottery, found near Colney Hatch.

I have some hesitation in troubling the members with this communication, but this being the last meeting of the present session, I wish to direct their earliest possible attention to a discovery which, though quite in its infancy at present, may ultimately prove of considerable interest, and is one which I think especially comes within the province of that Ethnographical Committee to which I have the honour to belong.

A few days since I received a note from our friend, Mr. F. G. H. Price, F.G.S., to the effect that a gentleman resident at New Southgate had, in the course of his geological investigations, come across Roman pottery and other relics in the immediate vicinity of his residence. Mr. Price was kind enough to suggest that I should give some attention to the discovery, so we accordingly visited the locality together, having first communicated with Mr. King, to whom we are indebted for the loan of the few objects exhibited. We found the site to be that of a gravel-pit situate at the extreme end of a road well known to the residents as Cock Lane, which lies some half a mile or so eastward of the railway station (on the Great Northern Line) usually known as Colney Hatch, but now called New Southgate. This road or lane is one of the direct highways to Edmonton, and is situate in that parish. To the left is the old village of Southgate proper, and to the right the tract of country which includes Wood Green, Tottenham, and Hornsey, and so on into London. In this gravel-pit, well known by the "Southgate" gravel which it produces, and at a depth of about four feet from the surface, the workmen discovered large quantities of animal bones associated with broken pottery, burnt wood, and other objects. Of the bones I do not feel myself qualified to speak. Mr. Price tells me that they are mostly those of the *Bos Longifrons*, and, if so, are such as are frequently found on Roman sites. Of the few pieces of pottery there can be no question; though fragmentary there is sufficient to at once distinguish them as Roman. There are also a few pieces of air-dried ware which we may even assign to British work. Mr. King possesses also a curious stone object, drilled through the centre, evidently for suspension; this may have formed portion of a necklace or other decoration, and is evidently of a very early

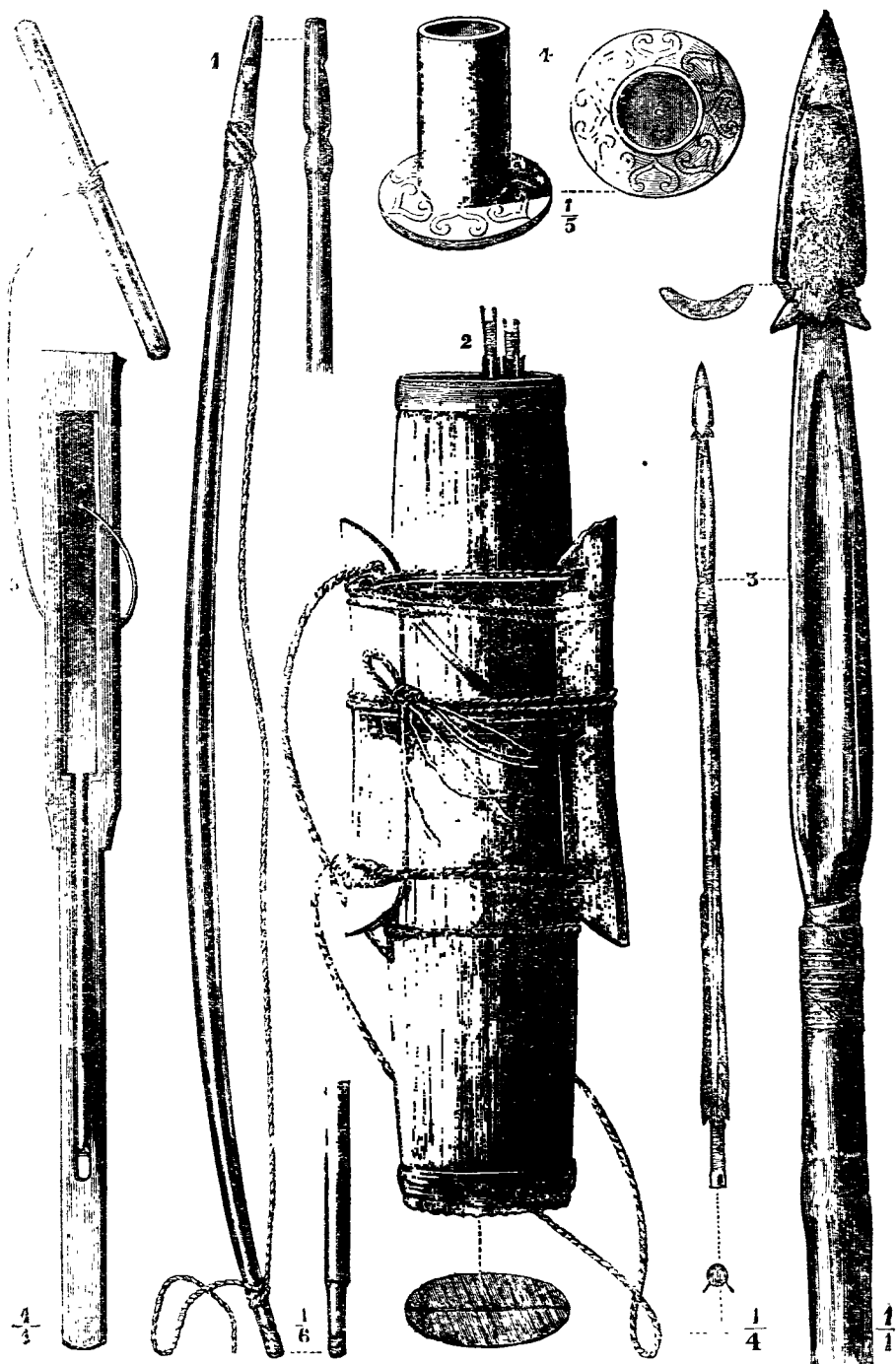
character. Of the geological features of the site, Mr. Price, from the hasty examination we were able to give, was of opinion that the vegetable soil reposed on drift gravels, formed of rounded and subangular chalk flints and quartzites, intermingled with chalky clay and sands. These gravels were of considerable thickness. Here and there were evidences of water-springs, the pebbles over which the water coursed being smeared with what he considered to be black oxide of manganese.

The interest, which as it seems to me attaches to the discovery, is the unquestionable data which it affords as to the presence of the Romanised Britons in this locality, a fact which at least possesses novelty in our knowledge of this portion of the county of Middlesex. So far as I am acquainted, there have never been found any traces of the Romans even in the immediate district. The origin of the little village in the neighbourhood is of no great antiquity, and Colney Hatch itself, though a large place now, was, as late as the reign of Henry VII, merely possessed of perhaps a dozen houses. The district was comparatively uninhabited—indeed, no situation existed for the construction of buildings or the requirements of residents; the district was close to Enfield Chase upon the north, and must have been skirted by richly wooded forests, with but few signs of human occupation.

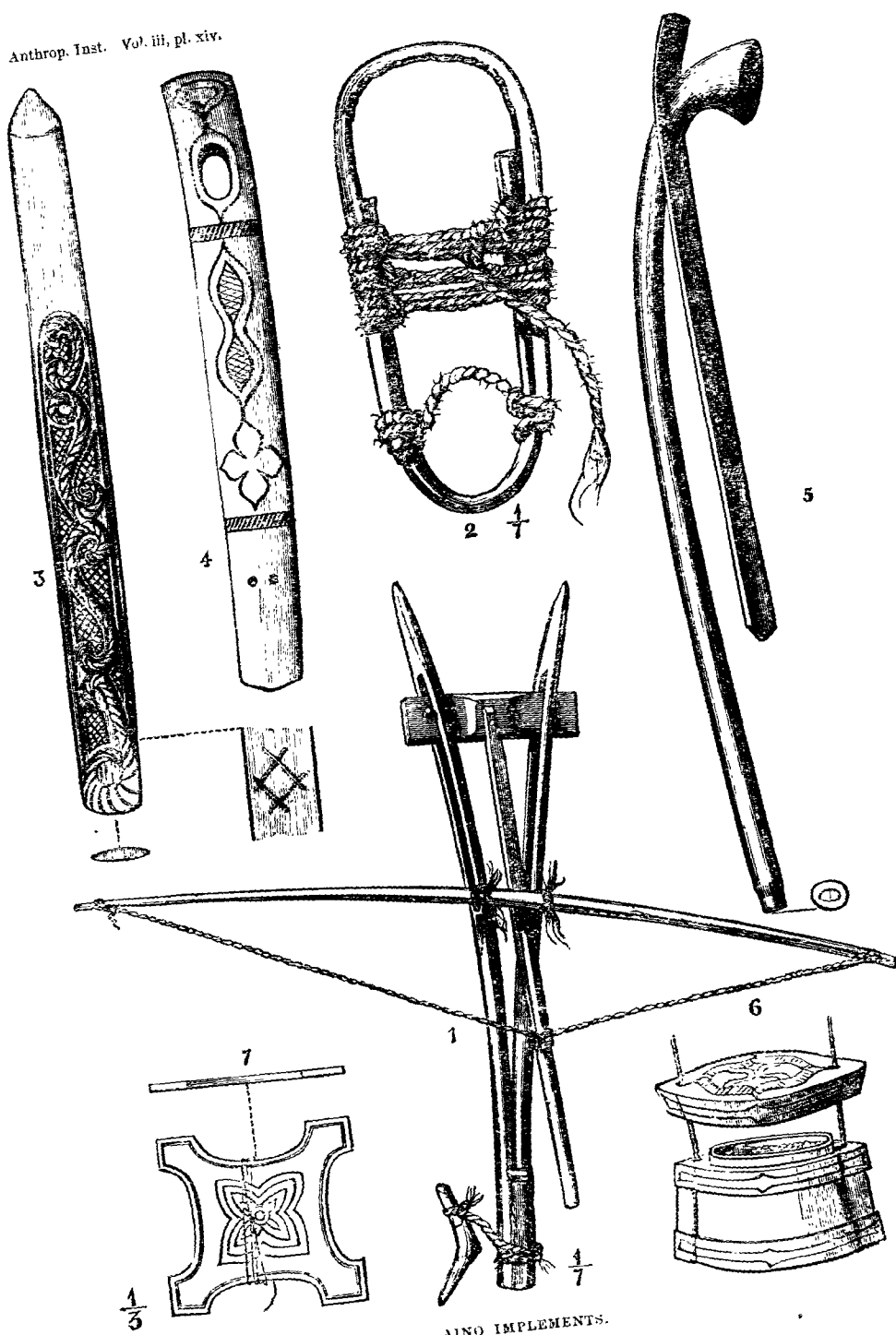
It is not my intention to offer at present any particular theory to account for these remains. There will be no difficulty in prosecuting researches as excavations proceed, and it may be that other things may be found which may render speculation at present undesirable. It is possible that human bones may be discovered, and that we thus can assign the deposit as being one of sepulture; but at present all that are found have been animal remains, which, accompanied by the charred wood, has rather a sacrificial aspect than otherwise. Or it may turn out that this isolated deposit which, by the way, is in *strict accordance with Roman regulations*—the bones, fire and pottery—may be connected with the early limitation of the great “territorium” or county of Middlesex, and there may consequently be a connection between it and the hundreds of Ossulstone and Edmonton.

It is sufficient to say that the entire district is worth investigation. The etymology, for example, of Colney Hatch, Southgate, and Bounds Green, requires some elucidation.

I have only to add that both Mr. Price and myself will be happy to keep the matter before us, and, with the assistance of Mr. King as a resident on the spot, we trust that when our meetings are resumed we may be enabled to give a more interesting report of our labours.



AINO IMPLEMENTS.



AINU IMPLEMENTS.

Mr. Edward Charlesworth exhibited a perforated shark's tooth from the Crag formation of Suffolk.

Mr. WALLER observed, that having recently seen a fine collection of fossils from the Crag at the Rev. Mr. Canham's, Ramsholt, Suffolk, he could bear witness to the extraordinary feature of the polish they exhibited to which Mr. Charlesworth alluded.

The following paper was read by the author :

On the AINOS. By Lieut. SWINTON C. HOLLAND, R.N.

THE Ainos appear to be the aborigines of Yezo, Saghalin, Kunashir, and the most southern of the Kurile Islands. They have excited the interest of travellers and geographers for some centuries past, and from our earliest accounts they have always been mentioned as being a peculiarly hairy race. The islands of Yezo, Kunashir, and a portion of Saghalin, belong to the Japanese; the natives, being entirely subjugated by them, are little better than slaves, who work at fishing, collecting seaweed for exportation, hauling wood, and hunting, for which they get a daily allowance of rice; the hunters in addition are allowed to retain a certain proportion of the produce of the chase. Although in such utter subjugation the Ainos are still a complete and distinct race; they have chiefs of villages, who are looked up to and obeyed by them, and who are made by the Japanese to a certain extent responsible for them; they live in separate villages, although always close to Japanese establishments; they clothe themselves, build houses of a shape and structure quite different from the Japanese, construct their own boats, have their own superstitious ceremonies and feasts, and, what is most peculiar of all, they have quite a distinct language of their own which is entirely different from Japanese, and many words of which the Japanese cannot pronounce.

There are very few Ainos at Hakodadi, none resident, although they occasionally come south to sell bear cubs, or to bring messages from the Japanese living on the coast; consequently the resident Europeans there know but little of them, and what they do know is chiefly from hearsay.

The Russian bishop, who has lived at Hakodadi many years, and who is a good Japanese linguist, states that the languages are totally distinct, and says that the Japanese cannot pronounce many Aino words, and that very few can speak the language at all. Most of the Ainos speak a little Japanese, but the ordinary mode of communicating is by a sort of jargon which is universally used round the coast.

The Aino men are of middle stature, well built and strong; the women decidedly below the middle stature, but also well

proportioned ; eyes dark, often black ; faces broad, complexion of a dark ruddy hue, hair black. The men part the hair down the centre, and generally trim it round the neck ; they carefully cultivate beard and moustache, never using knife or scissors to them ; their bodies are also covered with coarse hair in sufficient quantity to give them a darker appearance than if it were wanting ; it grows profusely on the breast, arms, and legs below the knee, and in some of the more hairy men I have even seen it grow down the backbone. The women part the hair down the centre, but they follow different modes of wearing it, some letting it fall simply over the shoulders, others plaiting it into two tails which hang down the back, and have at the ends a small piece of coloured cloth or ribbon ; others, again, smooth it down over the crown of the head, and friz it out over the shoulders. The young girls, until their marriage, I imagine, have it simply trimmed round the neck just above the shoulders. Some of the latter are good looking and have regular features and merry eyes, but hard work and exposure soon produce wrinkles, and they seem to age rapidly. It is hard to get any accurate dates from them, for, instead of divisions of time by numbering days, they always refer back to events, and on asking an Aino his age he will tell you he was born after the catching of the very big fish, or perhaps in the year when there was so much snow. They have no written language, although they have songs and tales handed down from their forefathers which are transmitted to their children, and thus they appear to preserve some rough sort of an account of their ancient history.

The only delineation of any sort taught is the design for ornamenting the edge of the atsis or robe, and the mothers take their daughters to the sandy beaches, and there, with a pointed stick or finger, they draw patterns for their children to copy. The Aino dress consists of a robe, much after the style of the Japanese, but lacking the long hanging sleeves, which are replaced with short close ones, and reaching down just below the knee ; this dress overlaps in front, and is secured by a band or cord passed round the waist. The material is either deer-skin, or a coarse sort of canvass woven by the women, with thread obtained from the inner bark of a tree, called by the natives the "offio tree." In summer the Ainos wear a single robe ; when hot the men often wrap it round their middle, leaving the body and legs exposed. In winter two or more robes are worn, also boots and caps, having the fur inside. Fish-skin boots are commonly used also ; they appear to wear well. Occasionally women wear Japanese trousers, but this is not universal. The Ainos are fond of ornament ; their robes have always a border worked in simple designs by the women, and both men and women wear

any ornaments they can obtain from the Japanese ; they do not appear to manufacture any for themselves. These ornaments have little variety, and consist of necklaces, earrings, and ribbons for the hair, having metal stars secured on them—also rings for the fingers ; the metal of which these are made seems to be a sort of pewter, and although possibly a few might be silver, they are uncommon. Any buttons or pieces of bright coloured cloth are at once made into necklaces, or attached to their garments. Children wear pieces of rag or a leather string in their ears ; occasionally this catches and is torn out of the lobe, when another hole is made.

In character the Ainos are docile and tractable, not the least selfish or grasping. On receiving a gift they always make a return, and this not only amongst themselves but to strangers ; they have not much to give but pieces of dried fish or venison, or a bit of seaweed. They also seem to be generous to one another, and always divided anything given them with their friends. On one occasion I gave an old lady a few *tempos* (Japanese coins), and she at once produced a piece of dried venison from under her dress ; not liking the appearance of either the flesh or her garments, I tried to refuse, but she urged me so earnestly that I had to accept the gift. The subdued manner of the natives is very striking, especially the women ; but when working by themselves, or away from the Japanese, they seem to throw this off to a great extent, and are naturally a laughter-loving careless race, constantly joking and singing ; they are now so dependent upon the Japanese for a large portion of their food, that did they not get a daily allowance of rice they would be in a sorry plight. At the *quaisho*, or head Japanese house, there is prepared so many times a day a number of portions of rice put in saucers which are ranged round the room. At the appointed time a man ascends a ladder outside and hammers on a board suspended by ropes for the purpose from a sort of gallows. This is the signal for the Ainos to come in, and they troop up from the village, each taking his saucer of rice, eating it and going away again.

After trying for a long time to get a bow and arrows, I at last succeeded in inducing a man to part with his bow, quiver, and three arrows (plate xiii) for a seaman's knife ; he evidently valued the arrows, and would part with three only. These last are universally poisoned, and are roughly made, but the Ainos are good marksmen although their weapons do not carry very far. The Aino from whom I got the arrows made me signs to hide them under my coat, for if the Japanese saw them he would get into trouble ; he also impressed upon me the necessity of care, and explained the effects of the poison by motioning as though

he had scratched himself with an arrow point; after pausing a moment he rubbed his eyes, then stared wildly about him, staggered round the hut, and finally dropped down. The poison, placed in the scoop-like head of the arrow, has the appearance of a reddish brown lump, about the size of the top joint of a finger, and smells strongly of tobacco.

The Ainos are keen hunters; on one occasion an Aino was sent out with one of our party to show him where to get deer; the man walked first, and presently sighting game, he turned round to point it out to the redskin (as they called us); but the redskin had already seen it, and the Aino finding that he was guiding an expert sportsman dropped at once to the rear, and could not be again induced to come to the front. It is curious that all Japanese books give an account of the *origin* of the Ainos, and all exactly agree. I have seen four or five which do not differ from one another in the least. The story runs thus: "The daughter of a Japanese Daimio having misbehaved, was punished by being set adrift in an open boat without sail or oars, and with only a few days' provisions and water. After drifting about for some time, at length the ocean currents took the boat close to the land, and presently floated it into a cave, where she landed with the remains of her provisions, hoping to get some assistance from the natives, but she could see no one, and her provisions were fast diminishing. At last having eaten all her food she sat down in despair, resigning herself to her fate; hearing a noise she looked up and saw a dog enter the cave, which, soon comprehending her wants, went and brought her some fish; this the dog continued to do day by day and finally marrying her, the race of Ainos sprung up from the union." Some Japanese declare the word Aino to have originated in their word for dog "Ino", but there appears to be little authority for this. They also state that "Yezo", the name of the island, is taken from the custom the Ainos have of bending the body when going before a high Japanese officer, especially the Aino interpreters, who lead the men for whom they are about to interpret by the hand, both having their bodies bent and advancing a step at a time dragging one leg after the other. Their attitude so much resembled the shape of a shrimp's body, that they were called "Yebi", shrimp, "So", savage; and Yebiso has since been changed to Yezo.

The modes of saluting among the Ainos are quite different for men and women. The men rub their hands together, raise them to the forehead, palms up, and then stroke down their beard, one hand after the other. The women draw the first finger of the right hand between the first finger and thumb of the left, then raise both hands to the forehead, palms up, and then rub the

upper lip, under the nose, with the first finger of the right hand. When a man has been travelling and returns home, he and his friend put their heads on each other's shoulders, the elder of the two then puts his hands on the head of the younger, and strokes it down, gradually drawing his hands over the shoulders down the arms and to the tips of the fingers of the younger; until this has been done neither speak a word. This is rather more familiar a salute than that of a stranger Aino, who is received by the head man of the village; both kneel down and the stranger laying his hands on those of his host, they rub them backwards and forwards, after this they talk, but neither says a word before the ceremony is completed.

After lying some days at a harbour the Ainos generally got accustomed to us and used to come off in their boats, make them fast alongside and look about the ship. They were always ready to pull on a rope or help in any way and used to take great pleasure in hoisting up the boats. They seemed remarkably honest, and on one occasion having promised a girl two buttons if she would be photographed, she agreed and took the buttons, but her courage failed at the last moment and she steadily refused to be photographed; she offered to return the buttons, I refused to take them, and she then ran away, but, just as I was going on board again, she came back saying that she had not kept her promise, and that therefore the buttons did not belong to her and she wished to return them. When talking to one another the natives appear to utter a few words in rapid succession, then to drawl out a word, often not the end of a sentence, as they repeat the rapid and drawling sounds many times without stopping; the drawling sound always finishes with an ascending sound, rising about three notes above the ordinary tone, which has a peculiar effect. Their singing is pretty, both men and women join; they sing well in tune and time, and chiefly while working at hauling nets or rowing boats; they appear to have the same song (for I only heard one tune, a sort of chant) both on the east and west coast, and this they sing in two parties, one answering the other in alternate bars. There is no attempt to harmonize.

Although all the women have the mouth and arms tattooed, there is some little variation in the shape and design of the marks, some having a broad band with the ends curled up from the corners of the mouth, others not quite so much and the ends are brought to a point in a line with the mouth, while some again have only a band round the mouth. All have the upper lip nearly covered and a much slighter band round the lower lip. The marks on the arms vary considerably, and the natives tell us that each part of the island has a mark peculiar to that

locality, but how far this was true was not ascertained. All the tattooing is commenced in childhood, and a little is added year by year until the girls are grown up. Polygamy is extensively practised, and the better a man hunts and fishes the more wives he has. According to the Japanese account a man who fails to support a wife as he should, is deserted by her, and she may look out for another husband who will do better for her. The duty of the wives is to save the husband as much work as possible.

More than once I have heard that the Ainos wear round their necks a small bag containing a charm or treasure, which may be anything uncommon, such as a coin, a stone, a piece of metal, and to this they attach great value, never parting with it unless they have done an injury or injustice to a friend, when they give him their treasure as recompense. It is said also that the Japanese take advantage of this, and confiscate these charms if they misbehave themselves. This must be a mistake, for although I have seen children with small bags round their necks, there was never anything in them, and I never saw an adult with a charm of any sort round his neck. The women are named often after the Japanese fashion; the two daughters of the chief at Akishi being called, 'Yoshko,' meaning 'Good-son,' and 'Fuyū,' which means 'winter,' two Japanese words; this information was given by themselves; but they may have in addition native names which they would not give.

When a person dies and is buried all mention of him ceases, and they carefully abstain from making any reference to the dead. The Japanese say, that if the name of a person who has died is mentioned, all those assembled weep, and the subject is dismissed again as soon as possible. There seems to be little ceremony over the burial of a body, it is always done at night, and a rough cross of wood in the shape of a T is placed over the grave. Bodies are often dug up again by the wild beasts and foxes, and little trouble seems spent over the dead after once a burial has taken place, bones and skulls if exhumed are suffered to remain unburied. It is said if a man dies, his house is burnt, and as far as could be gathered this is true. I also found a house deserted, nothing inside had been touched since the owner left it; his nets, cooking pot, implements and household articles must be of great value to his neighbours, but none were molested, although they must have been there a considerable time; probably he went out fishing or hunting and lost his life.

The Japanese priests say, that the Ainos have no religion whatever; but with all their gods and superstitions this must be inaccurate. They pay reverence to spirits of peace, of a

family, spirits who guard treasure, who preside over river fishing, over sea fishing, spirits of fire, of water and of mountains. Before drinking 'sake' (or Japanese wine) an 'ikubashi' or drinking stick is always used; this is waved over the cup, and the point of it having been dipped into the wine is sprinkled to the four quarters, meaning a libation to the spirits of fire, water, mountain and sea. In every village there is a sort of hedge made of bamboo and poles, these are kept firmly in their place by horizontal poles lashed along the bottoms of them, a few feet from the ground; on the top of the bamboos and poles are bears skulls, and often close at hand, in a cage, there is an eagle having also a smaller cage attached in which a crow is kept. All these appear to have some superstitious veneration attached to them by the Ainos, as have also bears which are caught young, and until old enough to feed themselves are suckled by women; when they are weaned they are placed in cages, about ten feet square, raised about three feet from the ground and about ten feet high; these are carefully constructed of oak poles lashed together, all the lashings being outside to prevent the bears gnawing them through. When the bear's teeth get so long as to give him a chance of eating his way out of the cage, he is noosed and dragged out and the points of his teeth are cut off with a sort of saw made by the natives for the purpose.

The Japanese say, that the Ainos fatten up a bear for two or three years, and then it is killed and eaten with many ceremonies.

The Ainos' houses or huts are simple enough, and consist of an oblong shaped structure with a sort of porch attached, they are generally about twenty feet long by twelve or fourteen broad, they have no partitions in the interior. In the southern part of the island there is a chimney inside and over the door made of grass, in the northern there is no chimney, but a window or square hole in the roof, which can be covered at pleasure with a thick mat kept for the purpose. These dwelling places are built of poles, perpendicular and horizontal, lashed together, which are covered with birch-bark and thatched with grass or serub bamboo. During winter the interior is further protected by having deer skins hung all round inside. The entrance of the hut is invariably inside the porch, the former is closed with a rough sliding door, which works between horizontal poles lashed together and wedged apart at the top and bottom; the door of the porch is closed with a mat hung loosely before it. In the porch there is kept the sledge, snowshoes, fish-skin shoes, mats, and the less valuable of the household property. On entering the hut, it is found to be matted, to have a fire in the centre, which burns in a bed of sand and is kept together by

four logs of wood. Over this there are a series of poles on which hangs a supply of dried venison, fish, &c., besides a curious miscellaneous collection of household goods, robes, and boots. The bow, arrows, and fishing spear are hung on the walls. In the fire-place are two or three offerings to the spirit of fire stuck into the sand, these are sticks whittled at the end, the shavings being allowed to hang down, not altogether detached. There is always to be found a lamp consisting of a scollop shell, with a little fish oil in it, and a wick hanging over the side, this is supported by a three pronged twig, the end of which is thrust into the sand. There are always a few wooden skewers on which fish, oysters, or venison are being cooked; and usually some shell fish are frying in their own shells. In one corner of the hut there is a shelf on which stands the lacquer ware, which is much valued and carefully preserved; a god of treasure, looking much like a rough scare-crow, and made of straw, usually hangs suspended from the roof over the shelf. The natives dislike strangers going near these shelves, and get uneasy if one approaches it, interfering if any attempt is made to touch it. All their lacquer is of the same pattern, and each house has the same articles; they appear to be manufactured by the Japanese expressly for them, as are also their knives. The only articles of home manufacture are their "atsis" or robes, bows and arrows, quivers, fishing nets, traps for catching animals, and canoes; they also make their own caps and boots, besides a few musical instruments. The huts in the north part of Yezo are better built, neater, and altogether superior to those in the south; and, though none of the Ainos are much addicted to washing, those living in the north are certainly more cleanly than their southern neighbours. On entering a hut on the N.E. coast, I was astonished to find it clean (of course excepting the poles over the fire), light and healthy looking. The embers in the sand fire-place were neatly swept up, and a rake, broom, and pair of wooden tongs were handy to replenish the fire or rake up the ashes. On either side of the hut was a raised platform, about seven feet square and two feet high, used to sleep on. There was a sick man lying on one of these; much attention had been paid him, and every pains taken to make him comfortable; a pillow made of clothes rolled up was under his head, a birch-bark vessel of rice and cup of water were by his side, and he was lying on some deerskins; there was even a broken vessel used for the purpose of a spittoon placed by him. The women seem industrious, and when in their houses are always to be seen working, either splitting up and twisting bark into thread, working the ornamental border for a robe, weaving straw mats or cooking.

The villages are built irregularly, the doors or the huts face

the sheltered side, away from the prevailing wind. Each hut has close to it a small shed raised on four poles, about seven or eight feet from the ground, these are built to keep stores in, and provisions, and are thus raised to protect them from dogs, foxes, rats and vermin. The bear cages are put amongst the houses in the village, and the bears are well looked after. The women are kind to their children, who are very merry and lively and generally look healthy. Babies are carried at the back, a plaited band goes over the head of the nurse, this is attached to the two ends of a short stick on which the child sits, another band round the child and secured round the nurse's body prevents it falling off. The Ainos have two or more dances; but these seem generally to be danced only on particular occasions, in one men only take part, in another only women.

The natives ride when travelling from place to place, also sometimes to the hunt. The hunters use bows and poisoned arrows with which they kill deer and large game; bears are generally shot with an arrow from a spring cross-bow, the trigger line of which is laid across their track, but sometimes in winter they find a bear in his den, when they make a stout wooden cross so large that it will not go in at the entrance, and cutting down a number of branches from the trees they put the cross over the mouth of the den, stir up the bear and make him savage, they then lay the branches on the cross and he clears them away by dragging them into him, thus confining his space and making him expose himself, when he is knocked on the head. The native traps for smaller game are very neatly made, the spring is obtained from a crossbow which is connected with the slide or door of the trap (pl. xiv, fig. 1). There is yet to be mentioned their boats—these are dug-out canoes, about twelve or fourteen feet long and three broad, they are worked with a paddle from one end and have often side pieces sewed on the gunwhales to raise them. For want of iron the staples to which the ropes are secured are prongs of deer's horns sharpened and driven in.

Many of the men work at carpentering with the Japanese, and are said to be very handy. I was surprised to see how soon they understood the various folding legs of my camera and stand. I have only known of one instance of an Aino striking a Japanese, and this was when the latter (one of the subordinates) was troublesome to one of our officers, and persisted in doing what he was told not; the Aino gave him a box on the ear which, although not returned, made him look very savage and sulky, and will probably have been avenged soon afterwards. The interior of the island seems very little known, but probably there are few if any natives living far from the coast.

As regards the number of Ainos existing, there are no statistics

which can be the least relied on, any attempt therefore in that direction must be almost entirely guess work, but they can hardly muster so strong as hundreds of thousands. Captain Cook mentions the natives of the Kurile Islands having been converted to Christianity by Russian missionaries; is it not possible that the rough cross erected over Aino graves may have its origin in some relict of Christianity left by them when visiting these islands? Cook says, that they used to visit the islands to the south, although he does not say how far their visits extended.

Description of the plates of Aino implements, selected from a collection procured in the country by Lieut. S. C. Holland, and presented by him to the Christy Collection.

PLATE XIII.

1. Bow, made of a yellowish-brown coloured light wood, one half of it being smeared with a dark red substance resembling dried blood. It is circular in section, one inch in diameter at the middle, and tapers slightly towards the ends, which are shaped for the purpose of retaining the bow-string; one being thinned away at the shoulder, and the other having two opposed notches cut in it. On the smaller end a set of marks is cut, consisting of two opposed pairs of notches, an oblique longitudinal notch having a shorter transverse one meeting it on one side at the middle, being repeated on the two interspaces; on the other end of the bow is a single deep notch. The string is made of brown bark-fibre twisted. Length $46\frac{1}{2}$ inches.

2. Quiver, made of two pieces of a soft light wood, hollowed out, laid together, and fastened at the ends with strips of bark. On the sides at the middle two slips of wood are fitted and secured with cord and strips of bark; to one of these slips the ends of the suspending cord are attached. Length $18\frac{1}{4}$ inches, width $5\frac{5}{8}$ inches.

3. Short arrow. The shaft is of reed, the lower end notched to receive the bow-string; a single feather is cemented to it and tied at the ends with fibre. In the upper end of the shaft is fixed a stout bone spike tipped with a tapered scoop-shaped slip of bamboo, having small barbs cut at the base, and its concave side filled with poison. The figure shows the complete arrow on the scale of one-fourth, and the head of the full size. Length $7\frac{1}{2}$ inches.

4. A hollow section of bamboo, fitted into a discoidal wooden foot, the latter stained red and ornamented with carving. Height 5 inches. Lieut. Holland stated that this was made simply as a specimen of their ability in carving wood, and that he never saw such cups in use, coarse Japanese lacquer-ware being generally adopted.

5. Jew's harp, made from a thin flat slip of bamboo. Length $5\frac{1}{4}$ inches.

PLATE XIV.

1. Wooden trap employed in the woods to catch smaller wild animals. It is in the form of a cross-bow, and consists of a pronged stock, a bow, and a T shaped slide. The bow is fastened to the stock at the lower end of two slits, made one in each prong; the bow-string is tied to the lower part of the slide, the cross-bar of which plays in the slits made in the stock. A short bent wooden pin, probably used as a trigger in setting the trap, is attached to the lower end. Length of stock 28 inches, length of bow 31 inches.

2. Snow shoe made of two bent pieces of wood, their ends overlapping each other, and fastened across with ropes of loosely twisted grass. Length 19 inches, width 8 inches.

3. "Ikubashi" or drinking stick, used by the Ainos to raise the moustache while drinking "saké." It is a flat piece of wood carved on one side and having a lozenge-shaped mark, perhaps an owner's or tribal mark, cut on the other. Length $12\frac{1}{2}$ inches, width $1\frac{1}{2}$ inch.

4. Flat piece of wood used to secure the pipe to the belt when travelling. It is engraved on one side, and slightly curved at one end, through which is perforated a hole for the pipe, as shown in fig. 5. Length $10\frac{3}{4}$ inches.

5. Wooden tobacco pipe together with the instruments for fastening it to the belt. The pipe bowl is very small, the cavity for the tobacco being only $\frac{3}{8}$ inch in diameter; it somewhat resembles the Tchutski pipes. Length 15 inches.

6. Wooden tobacco-box and cover, containing tobacco of a short fibre resembling Turkish tobacco, and probably of Japanese origin. A string passed through box and cover serves to attach it to the lower end of the instrument to which the pipe is fastened, two small holes being made in the latter for the purpose. Length $10\frac{3}{4}$ inches.

7. Flat piece of wood, engraved on both sides, and used as a winder for the bark fibre from which Aino nets and robes are made. $3\frac{1}{4}$ in. square.

[The following communications respecting the Ainos have appeared in the Transactions of the Societies comprised in the Institute.

The Hairy Men of Yesso, by W. Martin Wood. "Transactions of the Ethnological Society," new series, vol. iv. p. 34.

Description of an Aino Skull, by George Busk. "Transactions of the Ethnological Society," new series, vol. vi. p. 109.

Some Notes on the Ainos, by Albert S. Bickmore. "Transactions of the Ethnological Society," new series, vol. vii. p. 16.

Description of the Skeleton of an Aino woman, and of three Skulls of men of the same race, by Joseph Barnard Davis, M.D. "Memoirs of the Anthropological Society of London," vol. iii. p. 21.

Account of the Skull of a Ghiliak, Appendix to Article II, on the Skeleton and Skulls of Ainos, by J. Barnard Davis, M.D. "Memoirs of the Anthropological Society of London," vol. iii. p. 366.

The Ainos, Aborigines of Yesso, by Commander H. C. St. John. "Journal of the Anthropological Institute," vol. ii. p. 248. See also *ante*, p. 129.

DISCUSSION.

MR. GEORGE ST. CLAIR reminded the members that in the year 1864 Mr. W. Martin Wood read a paper on the same subject before the Ethnological Society. In that paper the number of the Ainos was estimated at about 50,000. The traditionary origin of the Ainos as related by Mr. Wood, although in some particulars the same as given by Lieutenant Holland, was in others considerably different; and in those points in which it was different it approached more nearly the story of the origin of mankind given in the Hebrew scriptures. The Ainos' tradition indicated that the people came to Yesso from the westward; but on the mainland no tribes were found bearing any close resemblance to the Ainos, and it would be interesting if any

light could be thrown on the ethnological relationships of so singular a people.

The PRESIDENT and Mr. HYDE CLARKE also joined in the discussion.

Lieutenant HOLLAND in reply said: The Ainos as a race are decidedly more hairy than any people I have met; by "more hairy" I mean that there is a greater abundance, that it grows more freely over the whole body, and that it is coarser and longer than is usual. It is possible that an European might here and there be found with nearly or quite as much hair on his body, but it would be an isolated case, and not to be met with every day, as it is in Yezo. The women do not seem to participate in this, and are not more hairy than is ordinarily the case. Some men are much more hairy than others, but if an equal number of Ainos and any other race of people I have seen or read of be taken, the Ainos would by far exceed them in growth of hair.

There is no doubt that the Japanese are inclined to exaggerate this, and that they are much struck with the appearance of people who grow more hair than is customary with themselves. To this day they call Europeans "Ketoqui," meaning "hairy strangers from afar," and being struck with our hairy appearance they would no doubt be much more so with that of the Ainos.

The only account of the origin of the Ainos which is to be found in the east is that published in Japanese books, and as far as I could find these all appear to agree. The Japanese story of the princess and dog is in fact the only account of their origin to be gathered from native sources.

It seems hardly possible that any accurate estimate could be made of the number of Ainos now living, when it is considered that Yezo and Kunashir belong to Japan; Saghalin partly to Japan, partly to Russia, and Iturup and Urup are less known than either of the others. A very fair enumeration could be made of those living round the coast of Yezo, possibly also of those inhabiting Saghalin, but it seems incredible that the total number could have been ascertained with any degree of accuracy.

The following paper was read by the Director:

ACCOUNT of an INTERVIEW with a TRIBE of BUSHMANS in SOUTH AFRICA. By G. W. STOW, F.G.S. Communicated by the PRESIDENT and Professor RUPERT JONES.

THE following interesting relation of an interview with a tribe or family of Bushmans is taken from a letter from Mr. G. W. Stow, F.G.S., to Professor T. Rupert Jones, F.R.S., and communicated by him to the Anthropological Institute. As Mr. Stow is occupied chiefly in geological pursuits his remarks concerning the character and habits of the natives are merely incidental, but as coming from an eye witness, and as relating to a fast disappearing race of peculiar interest ethnologically, they are well worthy of being placed on record.

Mr. Stow remarks with respect to the Griquas, that "as a

race, although some are possessed of a certain smattering of rude elementary knowledge, they are the most despicable set of natives he ever came in contact with, and that he and his party were very glad when they came to spots inhabited by others of more primitive ideas, such as the Bushmans, Batla-lins, etc.”

At a place called Witte-Sandt his party fell in with a small but interesting tribe of almost primitive Bushmans, which inhabits that remarkable oasis, as well as a *kloof* on the western side of the Langeberg. Before these people were actually seen, their immediate neighbourhood had been divined from their *spoor* having been observed.

Shortly afterwards Mr. Stow and his party descried two or three dark looking objects squatting like baboons on some distant projecting rocks, three hundred or four hundred yards away, and evidently on the watch.

One of the Griquas with Mr. Stow's party, who had apparently a dash of the same blood in his own veins, declared them to be Bushmans. He was, therefore, sent with a present of tobacco to parley with them. It was amusing to see the state of uncertainty the Bushmans were put into by this movement as the Griqua advanced towards the spot. “A party,” says Mr. Stow, “like ours was a most unusual thing to see in such an outlandish part of the country; isolated therefore as they were, and cut off from other beings, they naturally looked upon us with suspicion. Therefore as the messenger advanced the adults got up and began to retire, when on a sudden some half dozen little ones whom we had not before seen sprang up also, and commenced scrambling over the rocks with all the celerity and agility of their simian cousins. Our man shouted to them in their own language until he got near enough to hold a parley with them. They proved to be women who had been watching us from a far distance. They said the men were away, and they pointed out to our interpreter the nearest direction to find water, which we had been without for the last few days, and promised when the men returned to visit our camp. We proceeded about three miles further and encamped at the eastern foot of the Witte-Sandt, in a spot surrounded by large *Mimosas*. Two or three hours afterwards we noticed a number of natives advancing towards us in single file. These were the women of the tribe, some six or eight in number. They had evidently come to conciliate us if necessary, or to captivate if possible. All the younger ones were decorated with full dress costume, and I could not help noticing the remarkable regularity and nicety with which their faces were painted. The eyebrows were darkened with straight, thick lines of shining black paint, while from either angle of the eye to a point on the cheek a little below the level

of the ear the face was ornamented with red ochre. The effect was not unpleasing, and they certainly displayed much better taste than that shown by the Kaffir belles, who smear the entire face with red clay. The girdles of these women and the ornaments they wore on their heads were made of beads, manufactured by themselves out of ostrich egg-shell. Their aprons were made of numerous thin pieces of twisted leather, ornamented with beads of the same kind. A skin mantle or "kaross," together with bracelets, armlets, and anklets, completed their attire. Those who wore necklaces had jackals' teeth attached to them, and sometimes a small tortoise-shell. Fastened to a small belt round the waist several carried a box formed of a segment of a horn, and having a leathern lid to contain their paint, and another small tortoise-shell garnished with a leathern fringe containing the aromatic berries of a tree whose name I was unable to discover pounded and mixed with fat, forming an unguent with which they rubbed themselves when they wished to render themselves attractive to the sterner sex. These interesting ladies set themselves down in a row at a little distance from us. It soon became evident that our present of tobacco had created a favourable impression; and a further donation of the fragrant weed to all present, together with a little watered Cape wine to the elders, and a red handkerchief to the belle of the party put them all into ecstasies. They immediately commenced a general confabulation amongst themselves which, according to our interpreter, was a discussion upon our respective merits. Affairs went on thus swimmingly for more than half an hour, when other actors arrived upon the scene, this time the men of the tribe. The women had evidently been sent on first as a kind of feeler, and to ascertain the probable reception that awaited their lords and masters. As this, from their distant hiding place, had proved satisfactory, the men approached us with proper state and dignity. Leading the van was a grisly-headed old patriarch, with an ancient quiver slung across his shoulder and his bow in his hand; his son with the remainder, down to the small boys, followed at his heels with *kerries*. Their dress was simplicity itself. The older members of the community wore a skin 'kaross,' for the younger such an amount of clothing was deemed superfluous. The old man had a series of necklaces composed of various pieces of wood, roots, etc., reserved to be used as charms or medicine, as the case might require. They did not exhibit any other kind of ornament.

"On his first arrival the ancient gave us the usual salutation of 'Daag!' then drew himself up at a short distance between the women and ourselves, and with his hand over mouth stood to contemplate what must have appeared to him our rather out-

landish and unearthly appearance. A couple of coils of tobacco put an end to his reverie; but our request that he would divide the present between himself and his followers seemed to gratify his dignity. He did so with a generosity sometimes to be noticed in more civilised communities, doling out the smallest possible pittance to each of his retinue, and reserving the rest for his own use.

"The *entente cordiale* was soon established between us, and a small supply of diluted fire-water made him most amiably communicative. He allowed us to examine his bow, quiver, and arrows, and showed us the different ochres that were used as pigments for personal adornment. He said they knew nothing of painting on rocks; but had heard in the old time of a far distant tribe that did so. They themselves did not paint, but were used to chase the figures with a sharp piece of stone on the face of the rock. This, however, was spoken of in the past sense as if the practice had been discontinued at the present time. He described the mode of stalking the wild bucks, and showed us the poisoned arrow covered with blood, with which he had killed one that morning. He also described the operation of locust catching; the locust season he termed the Bushman's harvest. He entered upon the mysteries of drying and pounding the insects, and of preserving the powder in skin sacks, and spoke with a kind of relish of the savoury compound called 'locust cake,' a composition of powdered locusts and wild honey, food he joyously said that made the Bushman fat and his skin sleek and shining.*

"Lastly, for our edification he treated us to a wild kind of fandango, accompanied with a loud coughing bellow, all evidently much to the admiration of the members of the fair sex; and he finally wound up the performance with a rather boisterous laughing fit, swaying his old head to and fro the whole time."

The following papers were taken as read:

SPECIMENS of NATIVE AUSTRALIAN LANGUAGES. By A. MACKENZIE. Communicated by the Right Honourable the Earl of Kimberley.

Downing Street, 29th April, 1873.

SIR,—I am directed by the Earl of Kimberley to transmit to you, for the information of the Anthropological Institute, the accompanying papers, which have been received from the Go-

* Those who have tasted this confection pronounce it to be not unpalatable.

vernor of New South Wales, containing specimens supplied by Mr. Andrew Mackenzie of the dialects of the native Australian language as spoken in certain districts of the colony.

I am, Sir, your obedient servant,

N. J. HOLLAND.

To the Director of the Anthropological Institute.

Extract of Letter from Mr. Mackenzie to the Honourable the Colonial Secretary, Sydney. Dated 15th April, 1872.

I enclose a specimen of Mudthung or Thurumba, spoken by the aborigines of Braidwood, Ulladulla, Moruya, and Jervis Bay.

SPECIMEN OF MUDTHUNG OR THURUMBA.

Yenanye jellungundy bittoo Koraura worrungo wuttaliwowonye,

Come let us go to the mountain and look for cedar.

Wudtha jerrabar? bingaborōga wongawongay,

Where is the gun? I want to shoot some blue pigeons.

Elirra mūdabā thurgaunidha bungoin jetgauūidha,

Bring the tomahawk to cut the vines and mark the trees.

Ngerawonye wanda jerawaunye nauī thurgaunyenā,

Perhaps we might find a honey tree and cut it down.

Ellirra Kuku, muraūyau, bān gomingala,

Bring tinder and flint to make a fire.

Eleanga thonga, pa mondija,

Let us take some bread and meat with us.

Karugandhra miriga, yanaunye,

Call the dogs, it's time for us to go.

Puru nyemmu buttanu, Kaulga,

See here is a kangaroo track, it is that of a big old man.

Yenanye kotjerru gūna nyemma maiina,

Let us go by the lagoon, there's always plenty of ducks there.

Ngeraga wonga-wonga yanwunna uninga worrija kiuta,

I hear a blue pigeon sounding its note in the bush.

Yanaga, I go.

Yanani, thou goest.

Yanana, he goes.

Yananyinga, we go.

Yanano, you go.

Yananawa, they go.

Yanangala, we two go.

Yananu, you two go.

Yananora, those two go.

Yanillaga, I went.

Yanilli, thou wentest.

Yanilla, he went.

Yanillinyunga, we went.

Yanillana, you went.

Yanillawa, they went.

Yanillungala, we two went.

Yanillu, you two went.

Yanillowa, those two went.

Yanirra, go thou.

Yanunidha, let him go.

Yananye, let us go.

Yanirranu, go ye.

Yanaunawadha, let them go.

Yananga, let us two go.

Yanirru, go ye two.

Yanaunuradha, let those two go.

Yanoga, I shall go.
Yanauni, thou shalt go.
Yanauna, he shall go.
Yanaunyi, we shall go.

Yanauno, you shall go.
Yanaunawa, they shall go.
Yanaungul, we two shall go.
Yanaunu, you two shall go.
Yanunora, those two shall go.

Paddington, 25th April, 1872.

SIR,—In returning Mr. Andrew Mackenzie's letter to the Honourable the Colonial Secretary, of date 15th April, with its enclosure, I would suggest that some such instruction as follows may be sent to Mr. Mackenzie.

"The specimen of Mudthung which you have sent is just the kind of information wanted. The larger the collection of such words, with their inflexions and sentences, which you can furnish, the better. There can be no objection to your communicating on the subject with the gentlemen you mention, or any others. The object the government have in view cannot be injured by the spread of the information you obtain; but all the information you acquire concerning the aborigines you are requested to send to the Colonial Secretary with reasonable despatch."

I have, etc.,

WILLIAM RIDLEY.

To H. Halloran, Esq., Under Secretary.

Paddington, 20th June, 1872.

SIR,—Herewith I return Mr. Andrew Mackenzie's letter of the 27th May, with specimens of the "Thurawal" dialect, and translations of the same. As illustrative at once of the language and the ideas of the aborigines, these specimens are of much value. I have marked on the margins above, A and B, in order to state what might not be at once apparent to a person unacquainted with the language, that B is a translation of A.

These specimens of Thurawal comprise words used at Wide Bay in Queensland, on the Hunter and on the Barwan; confirming the observation I have made as to the very extensive prevalence of a few words, among tribes who differ greatly in their vocabularies. I refer especially to "Yai" (I), "Yinda" (thou), the root "yan" (go), with various affixes.

By the γ Mr. Mackenzie evidently means the same letter as I have represented by γ ; that is, the sound of *ng* in *sing*.

While writing on the subject, I would mention that the Rev. C. C. Greenway of Bundarra, who lately called upon me, has much information concerning the language and characteristics of the Kimalaroi-speaking tribes and others. As instances, Mr. Greenway pointed out to me that the name "Baiamé," which has been known for years as the aboriginal name of the

Supreme Deity, and which is mentioned in the Reverend James Gunther's "Grammar," is formed from the word "baia" (to make), so that for untold generations the Australian tribes have spoken of "the Maker", or Creator of all things. Mr. Greenway also pointed out—what every one who knows Kamilaroi must at once acknowledge to be true—that the names applied by the aborigines on the Namoi and Barwon to Venus, the evening star, "Yindigindowa" and "Yaigindowa", mean literally "you laugh", and "I laugh". The use of such a name for "the goddess of laughter" is remarkable. There are other coincidences or links of old association between the Australians and the Europeans. I reported in my account of last year's journey that Altair (the chief star in *Aquila*) was called on the Barwan "mullion" (eagle). Probably, on request from the Government, Mr. Greenway might supply very valuable information.

I have, etc.,

WILLIAM RIDLEY.

To Henry Halloran, Esq., Chief Under Secretary.

Moelly, Wandandian, 27th May, 1872.

SIR,—I enclose specimens of Thurawal, the vernacular of the aborigines occupying the country from Wollongong to the banks of the Lower Shoalhaven inclusive. The ten sentences, of which a translation into Mudthung was given in my last letter, are now, for the sake of comparison, rendered into Thurawal. The story is a local legend, told in their own elliptical and dramatic fashion, and taken, word for word, from the mouth of the narrator, a native of Shell harbour.

I have, etc.,

ANDREW MACKENZIE.

The Honourable the Colonial Secretary, Sydney.

A THURAWAL STORY.

The Spirit of the Fig Tree.

"I am going for wild figs." "Very well, go on, start away." Net, bangaly basket. He picked the figs, filled net and basket. Cut more bangaly for baskets and filled them with figs. The spirit comes, catches him, swallows him. Takes him to the water, drinks, spits him out again. Looks back, tickles him, looks at him; comes back, and tickles him again. Goes away, comes back, and tickles him again. Goes a long way, comes back and tickles him again. Goes a long, long, way to the mountain. He get up, runs to the sea, and jumps in; the spirit very near catches him. He goes into the sea; the spirit walks along the beach. He got upon an island; the spirit went to the rocks. The man shouted "Come here!" Shouted

again. They fetch spears, walk round him. "The spirit is this way!" The man got into a canoe. The spirit could not be found, he went into the rocks, he got into the hole.

SPECIMEN OF THURAWAL.

1. Yendasil bobarusō wēyagatiry windērong.
2. Wuddūna jīrabar? wattagū bulmo wongawonga.
3. Ğinda mundaboō kullyawaṣal da buḡgun kullyawaṣal do kūndā.
4. Iūa beruoṣle mūka kullyawaṣaldo kūndo mūka.
5. Ğinda jejūng *flint* kunbyūma.
6. Ğindaṣal thuṣoṣ po munny.
7. Thūinja na mirigoṣ yendasil yākūndo.
8. Minyana purrowally thunna, thuṣa biaṣally.
9. Yendasil wurrawry, mata kūna nara wurraury.
10. Ğarundygo wonga wonga kūryirra mudgy.

ENGLISH TRANSLATION.

1. Come let us go to the mountain and look for cedar.
2. Where is the gun? I want to shoot some blue pigeons.
3. Bring your tomahawk to cut the vines and mark the trees.
4. Perhaps too we might find a honey tree and cut it down.
5. Bring tinder and flint to make a fire.
6. Let us take some bread and meat with us.
7. Call the dogs, it's time for us to go.
8. See here is a kangaroo track, it is that of a big old man.
9. Let us go by the lagoon, there's always plenty of ducks there.
10. I hear a wonga wonga sounding its note in the bush.

JERRA THURAWALDTHERY.

Yirrama Karwēr.

Yandiṣai karwerullaṣo ṣai, yannio, kainandha, yandhānai. Kur-munnū, biaṣāly, Wunnomainbāla Kurwēry; Kurma, biāṣāly ṣoby-māta. Kullymīrgaia biaṣalywal, ḡōbymāia Kurwēry-Yandhānai, mumbaianai Kūbaia Yirramain-ḡaindhānai worry nadjoṣo, ūndhūmaia, dhūrauwaia. Jellunjūranadthanai, yangundaianai; nanyina-jellānai, yallumbunyainai, yangundibbāla-Iauagūnalaia, yallumbuṣa, yangundabillajaia-Iania worry, jaulajilaia, yangundibbāla jella. Iaugūnalaia war-r-ry bobārādha-Ya jaiūāna bulgo, thobarāralunbilla, ye maunda wunanye. Kainṣoyia yangarūya, ya wudjut yendaṣ. Barūngasa thallybunbila, ya kūrubun jūya Yirrama-Karrūgaia yūinya ya-a-i-Karuganbilla-Gumma ḡaimathaua; Kūlwaiona-Yirrama na pulla! Mudḡery purria-Parrylankanaia, yerrauṣa, yirriballaia.

Paddington, 29th June, 1872.

SIR,—Herewith I return Mr. Andrew Mackenzie's communication of date 10th June, with the accompanying specimens of the Mudthung or Thurumba, and the Thurawal dialects, which were enclosed in your letter of the 19th June.

In the Thurawal words for one, two, three, I observe the same peculiarity that I have before noticed in other dialects; that while the words for "one" and "three" are altogether unlike in nearly every dialect, the root for "two" is the same. At Wide Bay in Queensland it is "budēlā", on the Lower Hunter "būloara", in Kamilaroi and adjacent languages "būlār", in the western province of Victoria "būlār", and in Thurawal, on the Shoalhaven, according to Mr. Mackenzie, it is "pūlar"; while the words in Thurawal for "one" and "three" are utterly unlike any numerals I ever heard. Of course the change from *b* to *p* is unimportant; the aborigines constantly sharpen *b* and soften *p* so as to give them interchangeably in the same words. Why "two" should have an almost universal Australian root, while "one" and "three" vary in every locality, it is difficult to imagine; but there is no doubt of the fact.

I also observe that while "bīraban" signifies eaglehawk on the Lower Hunter (according to Mr. Threlkeld), this word is used in Thurawal for the emu. Other examples of this use of the same word for different objects occur. The word for eaglehawk in Thurawal, "mullin", is the same in root and in meaning as "mullion" in Kamilaroi.

I have, etc.,

To H. Halloran, Esq.,
Chief Under Secretary.

WILLIAM RIDLEY.

Moelly, Wandandian, 10th June, 1872.

SIR,—I enclose specimen No. II of Mudthung or Thurumba, as the language is called on the sea-coast. The dialogue is supposed to be held at Coorumbun, or, according to the mode of spelling adopted by investigators of the Australian languages, Kūrumbun, a place near the mouth of the small river running into Jervis Bay. Currambene, a corruption of the name, has been assumed by the colonists as the designation of the whole stream. I do not know that I could take a more fitting opportunity to suggest to the Government the desirability of ascertaining and preserving unalloyed as many of the aboriginal names of places as can be collected by competent inquiry. It is unnecessary to point out of what service these monuments may be to indicate the origin or illustrate the history, habits, or migrations of the former occupants of the soil. Euphony, itself not to be despised in the geographical any more than in the other vocabularies of a civilised nation, generally suffers, in common with other characteristics, by the transmission through uneducated or careless recipients of foreign appellatives, for such of course are the aboriginal names to Europeans. The native

names of farms, as they are measured, conditional purchases in particular, as the most numerous, might be correctly ascertained, and used in all official correspondence. Road trustees, also, might be instructed to make use—in all correspondence, advertisements, or contracts—of the aboriginal names furnished by an authorised informant, of the sites for bridges or other works. The proverb that “no stone is without a name,” if true of any country is especially so of Australia. Not a point or inlet, knoll or dell, glade or thicket, rock or rivulet, but was designated in the language, and faithfully delineated in the memory of the ancient inhabitants. A complete system of Australian topography would be a descriptive gazetteer on the very largest scale. A correct nomenclature of the most important features would, it is submitted, be well worth the trouble of carrying the suggestions offered into effect.

I have, etc.,

(Signed)

ANDREW MACKENZIE.

The Honourable the Colonial Secretary, Sydney.

1. Korūgama barundāna, Kutthūmbāna, barūnga wanjāwan erri-bunyūna, wullundina.

2. Barūnga maiāna Paoderi, tubārain marūlila wanda.

3. Wēlera yamūdha, jūa mūrira kūlāla, murundalawāna Kunamarambalāna.

4. Mūrira thūkāla bukiāi nyellāga ; barūnga maimbala nēnjī, kūlāgundēmbala mūrira.

5. Yendhimāranye, bānda Karibambrōnye jetitūnye ; thuōngjī Kunigūlān ōamaoniwanyana pa ōundhuōndū.

6. Jūa naiumberūnye mutiangamyena ; dhādhādha yanilla nyelinjī barūngain wurri.

7. Jajumberūnye mujeri, purungoanyināna wujut.

8. Yerruōgūnyūnye nyelinja Korūgamai.

9. Bānyena jajemburia, jumiga, Kurūdāna, biangalo ; jumigan-gudhāna jerungala.

10. Kurigandhawunyena biangaro, minambala, ōamāla jerungala.

11. Yerrūnganye, yerruōgunyene. Mai adhirra.

12. Yagunavani punyūnye bungaonye ? Kulutbaiōnye bungaonye, mitundhāli minumbarūna bungoji.

13. Jerumbunyūnye thanungo, thuritbaiunyena, sēlyena yerramaiunyena.

14. Kularyina murundūlera, mara Kulaonyedha.

15. Yerruōgūnyena yerāna, jumiga.

16. Jūlanye thanuōgo !

17. Thuritbaianyena yerrarwaiani.

18. Yeruōgāna yeruōgatalibalūnye.

19. Kunmāga barūnga, jelaowāli baola.

20. Nyaga jerungāla yenānaji meriraji yenabarāna.

21. Iūa yūin wanda. Nyaouyiyēna ngaoambiwunāwa yūingajena.
22. Dhadhūyine nanyēna barūngain jīgundi.
23. Walinderanū ūnywalyelo.
24. Iuitbairanu mulagairanu.
25. Nuriranū-kuliwalira merīra jelo.

1. The westerly wind is blowing strong, the vessels can't come in, they will be driven back.

2. There is a vessel lying off New Bristol ; she must have come in last night.

3. She looks like a whaler ; perhaps she has killed a whale, and fetched it in, and is tiring it out.

4. I saw a sperm whale spouting yesterday ; if the vessel stops here she will catch plenty whales.

5. Let us go and fetch them wood ; they will give us plenty bread and drink.

6. Perhaps we shall see some of our friends ; my brother went to sea a long time ago.

7. We'll ask for the boat ; to walk along the beach will make us tired.

8. This westerly wind will make it go quick.

9. Let our king ask for the boat ; he is a good man, a favourite, the chief ; the white people like him.

10. Our chief is calling ; he has got it, the white man has given it.

11. Come on quick, let us make haste. Now then, jump in.

12. How many are going to pull ! There are four to pull and one to steer.

13. When we get out of the creek, we'll put up the mast, and hoist the sail.

14. Fetch the fish spears, we'll spear some fish.

15. She goes quick, she's a good boat.

16. Here we are at the mouth of the creek.

17. Now then, up with the mast and sail.

18. How fast she goes ! we'll soon be there.

19. I know that vessel ; that is the one my brother went in.

20. I can see the men walking on the deck.

21. Some of them are blacks. Now I can see them quite plain.

22. There is one brother looking over this way now.

23. Let us take the boat on the lee side of the vessel.

24. Take down the mast and furl the sail.

25. Make fast ! get up on the deck.

COMPARATIVE VOCABULARY.

Mudthung or Thurumba.

Pūrū
Biribain
Yūin
Wenkin
Jumbuk
Kūna

Thurāwal.

Pūrū
Biribain
Dulla
Nurumbul, Mēga
Jumbuk
Kūna

English.

Kangaroo
Emu
Black man
Black woman
Sheep
Duck

<i>Mudthung or Thurumba.</i>	<i>Thurawal.</i>	<i>English.</i>
Mũnyuəa	Mullin	Eagle hawk
Mũndtha	Mũndtha	Black snake
Mitundthāli	Mitun	One
Mogandaora	Pulur	Two
Thũrangaora	Wowulli	Three
Bedhaigal	Kurumbaba	Pelican
Kundũ	Kũndũ	Tree
Wauwunna	Wauwunna	Crow
Yarāman	Yarāman	Horse
Pukeriə	Wũri	Sun
Jejũ	Jejũ	Moon
Bukun	Dthulga	Earth
Kunbi	Kunbi	Fire
Munna	Murrimul	Hand
Thunna	Thunna	Foot
Kokin	Dauə	Arm
Gurri	gũrri	Leg
Kabon	Wallir	Head
Pũnda	Thurra	Thigh
gũna	Mũna	Elbow
gũminyoy	gũminyuy	Breast
Thundthi	Thundthi	Waist

Moelly, Wandandian, 17th June, 1872.

SIR,—The scene of the accompanying legend is at Bendthualaly, between Perry's Meadow's and the Kangaroo Ground, as the two latter places are called by the settlers. Kangaroo Ground is a corruption of the native name Kangargraon. As in the case of the story previously transmitted, this has been taken word for word from the mouth of the teller.

I have, etc.,

(Signed) ANDREW MACKENZIE.

The Honourable the Colonial Secretary, Sydney.

JERRA THURAWALDTHERI.

Mēgaaolālī Wurragul.

Murra-murra maunmirria, ngaimaia Kangargraon; Kũruəaialũ mēgaaolālī Kangargraon pũrũwāəga; əaimialaola pũruəaiaolus; kaiaolanai miə mirigəəga; yakaiaolanna "wadthain bundamiai?" "Murra-murra əandəin yarība." Naoalya; waitborro Kuliaola mēgaaolan pũrũwandthir; wuraoranbala. Nĩndtha Bendthualali.

He got the mullet from the river, took it up to Kangargraon; he met the women coming from Kangargraon with poorawang (samia nuts, or native arrowroot); they fetched the poorawang, they talked to that dog; they said "where have you come from?" "I am bringing mullet from the river." That will do; the women corroborry gesticulating with the left hand; they fall dead. This was at Bendthualaly.

THE NUT GATHERERS.

From the mountain the nutters fruit-laden come back, with a fish
twixt their teeth ; meet the dog on the track.

“ Now whence come you, Warragul, tell us we pray ? ”

“ From the river below I have come all the way.

“ A mullet to take thence to Kangargraon thought,

“ Murra-murra thus far on my journey have brought.”

Enough ! through the frame of his hearers there steals

Subtle poison the blood, flesh, and bone that congeals.

Wild, speechless, and rigid, in vain to reply,

By voice or by sign, either maga may try.

Every fibre benumbed, a last effort to make

The spell that is freezing all motion to break,

For dance of defiance, they raise the left arm,

Outstretched, the limb stiffens, too strong is the charm.

They stagger ; the purawang poised on each head,

Falls split to the ground as the bearer falls dead.

At Bendthualälly they lie side by side,

With uplifted arm, as they fell down and died.

To this day may be seen, with their nuts round them strewn

The Purungalaïoula all turned into stone.

Paddington, 7th November, 1872.

SIR,— With thanks I return Mr. Andrew Mackenzie’s “ Story
of Bundoola,” in the language of Ulladulla and in English.

Of this, as of other papers from the same source, I can say,
though I am not acquainted with the Shoalhaven dialects, that
these specimens contain valuable information bearing on the
general subject of Australian languages. For instance, I ob-
serve in line five, the word “ ginangal ” answering to “ Southern-
ers.” The termination “ gal,” signifying people, is found over a
large part of Australia—in Gulligal, Warrigal, etc., like “ folk ”
in Norfolk and Suffolk.

I remain, etc.,

(Signed) WILLIAM RIDLEY.

To H. Halloran, Esq., Chief Under Secretary.

JERRA BUNDŪLA.

Yanaoyoa maranjī ; Kulambaroga maranjī ; mujeri, yirraganji ;
kutthū kawā kūrūaolan ! bungaoga jillunōō ; kūrowa kalandthun !
yanaoga thaogulywollun kaoraila ; bungayūga kutthuōō. Yanūūnye,
ma māra kunna, nombimunnōls ; yanūūnye, wurrunōa, wunnianye,
bangūnadtha, Yandthaojīna : wudthaolono, kaoo ! ōaiurāga ōaiīa,
yanaga, Yakūlily guiangal, yapāranū, jambinyuna. Yanaonye,
gumma ginnamaraya, Kurairi, Kulāōiyema, nyaoumbōni, ma nain-
juvanna buttūnū, murriba. Yanaonye, jambi, nyaonidtha thunbuō-

arūəa, wulluəaranya irrininagaoranna. Bundilli wenkinōji əundi-əura, wurrygalla na, naurraji jellowēgallū, yirrimūla warrinowarri, kabūtsh, əuri, minirra əuri, bungoīn; yanilla wurriji meriro; jergāra, juive, wurraora indai. Banborogundo. Murraoga nənji thogunda, kūmiranyī kunniəyēkumba, murrāiōga nēuji, əaiia, thōgunda, nyaimbioga Bundarwai.

THE STORY OF BUNDOOLA.

I go fishing, I am going to spear fish; my canoe, my fish spear. What a fine calm sea. I'll paddle over there to the surf at the rocks. I'll go to the bush, the sea is too rough. I'll paddle out to sea again. Let us run away, because bad, nasty fish (are what he gives you, understood). Let us run away, children, we'll leave him when he goes out far. He follows them. Where are you? hilloa! I hear them over there, I must go thither. There they are, the Southerners, says he, that's our brother-in-law coming. Let us go, let us make the spear ready; all ready; you are a good marksman, you wait here, because this is the path that the kangaroo takes his road. Let us go, brother-in-law, you'll see your wife's country, you'll see the great precipice. Bundoola's wife belongs to that place. You come close to the edge, you stop here. They shove him over a good way; kill him dead. Rope, you catch hold of the rope, vine. He comes up the long way to the top. Cut the rope, serve you right, you dead now. This was at Banboro. I'll go home to my place, this place is too rough. I'll go and try another place. I'll go a little further. This is the good habitation. I'll stop here at Bundarwa.

Version by Binmoon, aboriginal of the Ulladulla tribe.

JERRA BUNDŪLA.

Yanaolila guiaəgul: yanaonyi marumbulluny-yukāu! Kaorālan, purinīnī, Kaūliwal! Bungaoga; nanyirūəga? Ngaowē. Yenanyi, madtha Kunna māra, bombi manōlo, əaiawunyiəga madtha kunnuaji mārīn bombi malōlo, Bundulus wunnalunyiəga. Kai-ai-ai! Nyūkūlilī, guiaiaəgul. Naiaga guiaiaəgul. Bāndthana-rūəgao! əaiamuə-kuribūla, kuribula! haiamuə. Yenaonyiəga. Kurairiwūga. Maiūnyi nənji, madtha mundija marāna nənji. Nyuəa, nyuəa, Bundolo! Waiē-ē-ē! Nyuəa Kūlālā jambydthain. Ilēnye numdija jeleiya. Kunamaronye mundijain. Nyerra, nyerra, nyerra, jambi! Thunbūəarakaiəo wenkinkūlino. Mubūra, mubūra, jambi, jelinjūla? Yukau! mudjeri kaoja! yirigarəkaji əaiilijina! əaiima, jambi! minirradthi! Ai! Kutgāla. Yukau! wurra wurra Kaoja, punjerri kaoja! Kaoja! əaiima, minaorokumbera, jambi. Ai! kutgakūla, jambi. Yanuwanaji thōgungo. Wudthaola? Thaōālim. Yanuwanyi əundi myelēiya Burwerə.

THE STORY OF BUNDOOLA.

Blackfellow came from southward. We'll go and fish. Oh, calm, very smooth! He jumped into the canoe. You see me? Yes. We'll go, because he gives you bad fish. We have left Bundoola.

Hilloa! there they are, the southerners. Fetch us a firestick. Here! It has gone out. Here! let us go hunt: mine (spear) is ready. You stop here, because the game runs this way. There they are, there they are, Bundoola. Whizz-z-z! Our brother-in-law has speared him. We'll take the meat over there. Let us roast the meat. Look, look, look, brother-in-law! Have a look at this place belonging to your wife. Go a little closer, brother-in-law, go a little closer to the bank. Oh dear! my canoe and fish-spear all lying there perishing. Here it is, brother-in-law; you catch hold. Oh dear! it has broken. Oh dear! my two-pronged spear and tea-tree javelin! Here, brother-in-law, catch hold again. Hullo! it has broken again, brother-in-law. Let us go to the camp. Where is he? I don't know. Let us go hence to Barwëra.

Version by Thooritgal, aboriginal of the Ulladulla tribe.

THE STORY OF BUNDOOLA,

Done into English by Bimmoon, aboriginal of the Ulladulla tribe.

A good while ago a black fellow named Bundoola, lived at Bundarwa, on the north arm of Jervis Bay. He was *murraori*, long and big with robust arms, like a tree with its limbs. He lived in a big cave, *yerroua*. If any one goes to the cave, the waters of the sea will cover the place. He had with him two wives, their four children, of which three by a former husband, and the mother of one of the wives. He did not treat the children well. He used to give them for food, shark, stingaree, *kooroodthoo*, and *nijoolidjong*, the two latter fish resembling eels and stingarees. The mothers used to tell the children not to eat the trash, but throw it away.

They came from a place called Banboro, in the mountains near Jamberoo—Bundoola used to boast to his wives of his expertness in catching fish. One morning he went out as usual, in his canoe, leaving wives, mother-in-law, and children in the camp. The sea was smooth and the weather fine. He was very successful in his fishing. He had a very long fish-spear, measuring about twenty feet, called *poonjerry*. He shouted to his wives to tell his mother-in-law how skilful he was. "You watch me, you watch me," he said. They signified assent.

The women began to talk to one another about the foolishness of remaining with a man who treated them so ill, and the favourable-ness of the opportunity for running away. They fled with the children and all their things. Bundoola still kept fishing, and occasionally calling out to them. He heard them answering him, as he thought; but he was deceived. What he heard was the noise made by the *morat*, or two trees touching and rubbing against one another when agitated by the wind. At last, having filled his canoe with fish, he thought it was time to leave off fishing and come ashore. As soon as the canoe touched the sand, he shouted to his wives to help him to draw it up with its load on the beach.

The sound of the *morat*, just then repeated, made him think that

his orders were attended to. At a loss, however, to account for the delay in the women's coming, he went to the camp and found it empty. He cooeied again, and again heard the cry of the *morat*. He followed the direction of the sound, until it brought him in sight of the artifice by which he had been deceived. He was at first furious with rage, but having picked up the tracks of the fugitives, followed the trail, weeping as he went along. The tracks led him to Burrier. He carried a canoe with which to cross the river, and left it at Yalwal, where it can yet be seen fossilised. Thence he went to Kangargraon in quest of the runaways. He followed the river up to Noorunmaia. Whenever he fell in with a wallaby or paddymelon, he would imagine it was one of the party he was in search of, and call out, "Stop, come to me, my child, my wife." From Noorunmaia he tracked them to Banböro, where they were encamped with their friends.

Approaching the camp, Bundoola gave the customary cooe. The camp was all on the alert. "Ay, ay, here's the master, the villain, coming."

Bundoola, as usual with visitors from another tribe, sat down a little way off. His wives brought him fire, and went back to the camp. He crushed out the fire, pretending that it had gone out of itself. His wives brought him a burning brand, and this time he kindled a good blaze. The women remained with him. Next morning there was to be a great kangaroo hunt. The women said to their relatives, "these children are nearly poisoned to death with the carrion given them to eat by their father." One of the children was Bundoola's own, a boy; three, a boy and two girls, belonged to a man who was dead.

The tribe called to Bundoola to light a fire and make a spear for the hunt. He was not long in making a capital spear. The hunters betook themselves to a long point, and killed a great many kangaroos. Bundoola distinguished himself by the distance at which he struck his game. He did not want to come nearer than three hundred yards to be sure of his mark. Fifteen kangaroos, the result of the morning's sport, were put into the ovens of earth and hot stones. After the feast his connections told him they would next day show him his wives' country, what a fine territory it was, and how well stocked with game and native honey.

During this excursion, as the party stood on the edge of a cliff, the old men gathered about Bundoola, and pushed him over the precipice. He fell a great way, but was not killed; so they let down a long vine for him to lay hold of, and drew him up to the top. Just as he stretched out his hand to catch hold of the summit, one of them severed the vine with an *amubūga*, and down he fell again to the bottom, this time completely crushed.

"Yenaunga," we are going away; you sit down there dead; war-ragul eat you, and hawk eat you, and fly eat you; you are too much of a rogue."

Bundoola dead, dreamt of going back to his own place. As he

journeyed south, he tried the different caves in the cliffs, but found them all too diminutive for his comfort, until he got back to Bundarwa. He turned himself in his place of abode, and sat down with his arms extended, and * * * * and there he sits petrified to this day.

MULLIMŪLA THURAWALDITHERI KURIALLA.

Yenda Jejū, mulliwauthana Jejuəko, mullimŭla mega yandthannunə thullimalaoa kaiuəgo, kundthumaiaoa paiamingaəga, kaiuəga, Pulinjiruəga, kanda-Yangaoana Jindaola-əurundthilanai Guiaian, wudthawaiin, yaəgai? thuraodamurra yaəganai əurumbəəganda; kubbutgailaəganda; piailinuradtha yaəgamaoranurdthundtha kulinaianumai thurinaianai mobarudthu. Kulabimaianai, meriruəgo yenaūwa, kŭranaiuwa mamrŭdthana.

THE PLEIADES.—A THURAWAL STORY.

The moon came, the moon was enamoured, came to the Mullymoola damsels. They were catching kaioong, were roasting with hot stones piaming* and kaioong,† at Poolinjerunga, near Kān. They went to Jiudoula. The Southron heard them. Where are they singing about me? I hear them singing about me in the gully; let me have pipe clay to corroboree; sing that song; let me dance. I'll spear you in the eye. They go under the ground—they went up to the sky; the sisters became stone.

KUMINŪ THURŪMBA.

Jakwila, Bombi, yanilla Didthullo.

Wurritbŭlawa yŭinbrāga, bombi wuthāla: murilla yŭinya kulālawa, kummai, jerumbadthi-Yanilla wurri Pŭndutbai-Yanaila undi na Pŭlinjira-yanaiḡŭla undina wurri Moruyai, yenna minnaiila Kulŭwara. Yukūəa yanaiila yŭin wenkin wukaori wurri nya valilly Biriri pa Yirikŭla. Murilla munna munna Mieruəgo, unia maiiladtha Juimbāra undthuwalŭ yanillaora miriru. Yukūəa nyillaora mārā. Yukūəa yandthilora kulalaora chir-r, chir-r. Nuwalily Karandillaora warri, jŭalily wudjutdtha juruəatillaora bombi. Yukūəa yuin wenkin mŭiāla, ililla yukūəa Kunamŭla. Yukūəa nangaiila, ya Kunilua, Yukūəa yanailŭwunna ya Jakwilanya, jŭkŭluə pulungumbāla, minilla bombinya əundy bānda, yukūəa ilumbāla wurri joāli Didthulla, Puindalanya yuin wenkin. "Wudthaola maranŭ Jakwilao?" Yukūəa paianjalila nyellunji marungo nyello. Yukūəa Jakwila jergāla kubānyena, yanainrilanya thurinmōla, jerwala Didthul.

A THUROOMBA STORY.

How the Pheasant and Eel went to Didthul (the Pigeon-house Hill).

Men‡ were playing. The eel starts out of a hole. They ran down

* Bulbous reed that grows in swamps.

† A small kind of fish, so called by the aborigines.

‡ Or *kurrakurria*, sort of little birds.

to spear him. Went all the way to Pundutba. Thence to Pulinjera. Thence all the way to Moruya, found the deep water. Then all the men and women went along the bank, all the way to Biriry and Yirikul. News went over then to Mirroo, where the two Jea*. Then those two went thence up to the sky. Then those two saw the fish; then those two stuck the spear into him. Then went into the water, then up the beach, fetched out the eel. Men and women were glad, took the eel then and roasted him. They slept, the eel was burning. The pheasant came and put him in the jukulu,† took the eel out of the fire, and carried it away to Didthul. The men and women got up. "Where's that fish belonging to that pheasant?" They fought for this fish. The pheasant cut off the eel's head and stuck it up, then called it Didthul.

Version by Theooritgal, aboriginal of the Ulladulla tribe.

Professor Max Müller has forwarded the following letter and vocabulary for publication in the Journal of the Institute.

Natal Downs, Queensland, 31st August, 1872.

SIR,—Having heard you are desirous of obtaining list of words spoken by the various native tribes of this island, however brief, I send you a short vocabulary which I trust will be of some use. As regards the grammatical construction I can only say that the inflection of the voice and position of the words, as a rule, have more to do with the meaning of a sentence than I can express. The substantives and adjectives appear to have no declensions, nor the verbs conjugations. Gender, however, appears in many words (masculine and feminine only), likewise degrees of comparison. I have lists of proper names, belonging to various places on my run, but have not forwarded any, not knowing whether they would be of any use; should however you think otherwise and will communicate with me, I will send them to you, likewise such other words or (if useful) accounts of the native manners and traditions as may fall under my notice. I will remark that it is with great difficulty I have managed to learn so much of the language; the blacks in this district having only within the last few years given in to the onward march of civilization, and, making friends with us, come about our station in a peaceable manner.

I am Sir, your obedient servant,

WILLIAM CHATFIELD, junior.

Max Müller, Esq. Professor of Languages, Oxford.

* Fishing hawk.

† Bark off the excrescence of a tree, used as a vessel for holding honey or other food.

YŪCKABURRA DIALECT,

Spoken by various tribes on the Cape River, Kennedy District, Queensland; lat. 21° south, long. 146° east.

Country or ground	...Nanneē	Tree-green snake	...Warrowa
Camp	...Yāāmbāā [moo	Brown snake	...Yabbeya
Water	...Commo or am-	Black snake	...Cooterēē
Fire	...Burry	Diamond snake	...Moonghully
Tomahawk	...Polgho	Water snake	...Ammoondoro
Knife	...Kunga	Blackhead snake	...Ghoyoghorō
Needle	...Pēgooroo	Death adder	...Munnum
Meat	...Euri or ummy	Spear (heavy)	...Moorgsa
Fat	...Tommy	Spear (light reed)	...Culgha
Father	...Yaboo	Stick for throwing	
Mother	...Yūnghānā	spears	...Tūmulla
Sister	...Coothoona	Throwing sticks	...Miroo
Brother	...Cuthun or wābo	Boomerang	...Wongul
Uncle	...Mamy	Shield	...Coolmarry
Aunt	...Iabina	Club	...Dimy dimy or bullen bullen
Cousin (male)	...Kunghun	Black fellow (a man)	...Murray
Cousin (female)	...Kunghina	Woman (generic name)	Wongho
Husband	...Goonghul	Virgin	...Oolbo
Wife	...Pighoona	Young woman (mar-	
Kangaroo (forest)	...Oora	ried)	...Munkine
Kangaroo (rock)	...Kargool	Old woman (married)	Boorghān
Wallaby (forest)	...Toomba	Child (either sex)	...Candū
Wallaby (rock)	...Goonyooloo	Eyes	...Dille
Kangaroo rat (small)	Wier	Mouth	...Thi
Kangaroo rat (large)	Wipēr	Nose	...Ninde
Opossum	...Tungharoo	Teeth	...Ear
Flying squirrel	...Mungaroo	Beard	...Unghua or yar- rine
Bush rat	...Mabberoo	Ears	...Walloo
Rabbit rat	...Tubberoo	Throat	...Booa
Flying fox	...Gooudulū	Chest	...Toongha
Porcupine	...Būbbēra [tee	Arms	...Peighar
Native dog	...Moora or wun-	Hands	...Mullah
Emu	...Goondooloo	Thighs	...Tia
Eagle hawk	...Kooragsa	Lower part of leg	...Yunghera
Common hawk	...Peigsu	Feet (also a track)	...Deener
Sparrow hawk	...Kurghina	Man's private parts,	
Quail	...Buuandool or boondū	also an animal's tail	Boongha
Small birds	...Dēviltēē	Woman's private parts	
Black duck	...Coobery	also, pouch of mar-	
Turkey (plain)	...Būrkūm	supial animals	...Goora
Turkey* (scrub)	...Cocoobeēn	Woman's breasts	...Ammoonā
Native companion		Woman's milk	...Ammoon
(large crane)	...Coolthēroo	Knee, also elbow	...Magsin
Bat	...Moonya moon-	Hair	...Cathy
Fish (generic name)	...Goyo [ya	Alligator (literally big	
Black bream	...Weaner	guana)	...Tuckinā
Eel	...Wakul	Iguana	...Tuckine
Dew fish	...Doonghooloo	Bandicoot	...Ugsulla
Fresh-water Turtle	...Conghoree	Man's testes	...Calloon
Craw fish	...Cunder	Man's water	...Culmara
Snake (generic name)	Moonda	Man's ordure	...Goona
Carpet snake	...Carbool		

* Literally *eggs*, on account of so many being found in their nests.

Sun ...	...Kie or curri	Wind ...	...Ebārā
Moon ...	...Bullaroo or cughghera	Bones ...	...Pulbun
Star ...	...Buthy	Dream (noun)	...Pidgsoungħ
Dew lizard	...Bunghārā	White cockatoo	...Tiroon
Rain ...	...Yoonghooloo	Cabbage tree	...Ungūn
One ...	...Wigsin	Bottle tree	...Bingsē
Two ...	...Bullaroo	Mulga tree	...Boonaroo
Three ...	...Goolbora	Gidyah tree	...Coobarool
Four or many	...Moorgħa	Bark (of a tree)	...Gogħa
Curlew ...	...Goolba	A native gunyah or hut ...	...Bulghunna
Laughing jackass	...Coocoopera	Opossum rug	...Comby
Stones ...	...Byee	Chisel ...	...Toongħara
Mountain (little known —country being flat)	Byee	I or me ...	...Iā
Scrub ...	...Mūther	You ...	...Inder
Plains ...	...Bargħulla	Mine ...	...Ichu
Fishing net	...Mabbe	Yours ...	...Uno
Kangaroo net	...Boogħaroo	Come here	...Ullumbāgho
Wallaby net	...Wyang	Yes ...	...Yea or yīē
Net belt (for waist)	...Moorgħooba	No ...	...Curra
Net head-bands	...Tarwie	To sleep ...	...Umbér
Woman's belt	...Womby	To kill ...	...Goondāly
Eggs ...	...Wongħera or coocooheen	Dead ...	...Goongħa
Tree ...	...Boboro	Put down	...Etar
Leaves ...	...Deēē	There or here	...Ulle
Charcoal ...	...Mūther	Where ...	...Under
Ashes ...	...Booan	To go ...	...Umbāgho
Water vessel	...Eghara	To sing ...	...Mombo
Water gourd	...Widgse	Salt water (i.e. the sea)	Commo cungha
Fly (noun)	...Nein	Sea (sometimes)	...Coogsera
Mosquito ...	...Boothun	Long way	...Yurgho
Perspiration	...Culghārā	Near ...	...Yathan
Lice ...	...Coolleen	To give ...	...Unoonda
Stick (noun)	...Tular	To hunt ...	...Yungħundiana
The evil spirit (the devil) ...	...Ghoīn	Hungry ...	...Congħono
Crow (noun)	...Wothun	Thirsty ...	...Commo boomūl
Pigeon ...	...Marmola	Stomach ...	...Bunner
White ...	...Bumbera	Tight ...	...Uthulla
Black ...	...Coorabila	I have had enough to eat, literally my sto- mach is tight	...Bunneruthulla
Red ...	...Nameroo	Tired ...	...Dilmurra
Green ...	...Boorba	Find, used idiomatic- ally as—	Nughghalee
Feathers ...	...Boona	To see ...	...Dillegho nugh- ghalee
Liver (a man's)	...Yāgōree	To hear ...	...Walloo ghō nughghalee
Flowers ...	...Mungha	To smell ...	...Ninde ghō nughghalee
Lily roots	...Coomy	Big fellow	...Bullongħo
Lily seeds	...Pundy	Wild fellow	...Bunginme
Food ...	...Munda	Frightened	...Bungha
Sand ...	...Culba	Long ...	...Ghoorghan
Bee's nest	...Carpa	Short ...	...Wapitu
Grass ...	...Boorghan or moolo	Cold ...	...Wēra
Sick ...	...Nemo or Ul- longħo	Hot (also the sun)	...Kie
Sore ...	...Bungsera	Quick ...	...Wokker
A sandy watercourse	Culbara	Come on ...	...Wingsially
Sunrise ...	...Kie wēdēra	To tumble down	...Coongħeringħo
Sunset ...	...Kie burra	Break ...	...Coongeelee
Noon ...	...Kie kunghal		

Go on ...	...Umbāgo	To hide ...	...Niroo
Be off ...	...Mung̃ha mun- gha	New ...	...Yagsilla
Be off ??? ...	...Mung̃hawingsa ???̃	Old ...	...Coolbaroo
To flog ...	...Wūmmēra	Grey ...	...Binghara
To beat (to excel) ...	...Boomālī	Stop ...	...Mung̃hoindēē
To come back, i. e., toYandagoin- return ...	... yalle	Pull away ?	...Burr̃gāā ?
To come back, i. e., toYandag̃hoiny- return ...	... alle or yando	Stop pulling	...Unōō ?
To eat ...	...Bungsul	Yams ...	...Monilla
Bite ...	...Curraburra	A root that grows in the swamps	...Coothia
To pretend	...Ughatharing̃ho	Sharp ...	...Tarrinne
Tie up ...	...Ondingsano	Smoke ...	...Tug̃har
To cry ...	...Barry	What is your name ? ...	Nūmbēra in- der ?
To cooēē ...	...Cong̃hul	What is your tribe ? ...	Unnyburr̃ā in- der ?
To wipe ...	...Ong̃ho	Thunder ...	...Pulbine
To lose ...	...Umbully	Lightning	...Besmallen
To laugh ...	...Yēē	Freshwater mussel	...Curruwine

Tribes speaking this language, or rather dialect, with a slight difference in each tribe.

Yūckaburra (supposed to be the original stock).

Peg̃kullaburra.

Woc̃cūllaburra (Eel nation).

Goondoolooburra (Emu nation).

Monkeyburra.

Mong̃huburra.

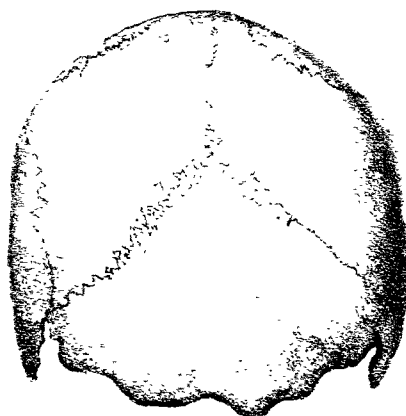
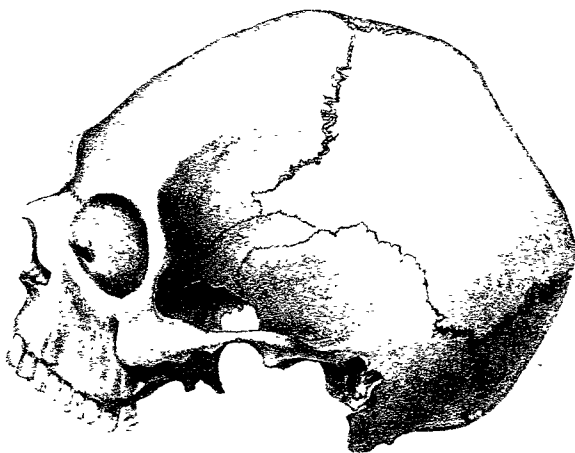
These tribes have all been named after some peculiarity either in the abundance of a certain kind of game or some natural feature of their country; but in some cases the language has altered, and they have forgotten what they were named after. Each of these tribes is divided into four divisions, having each its representative animal, in fact, crest; and every man and woman on arriving at puberty has a peculiar mark or marks imprinted in his or her flesh, so that a black fellow can tell at once to which family another native belongs. The following are the subdivisions, with their emblems.

Uthēroo, Emu, or carpet snake.

Mūllēroo, Iguana.

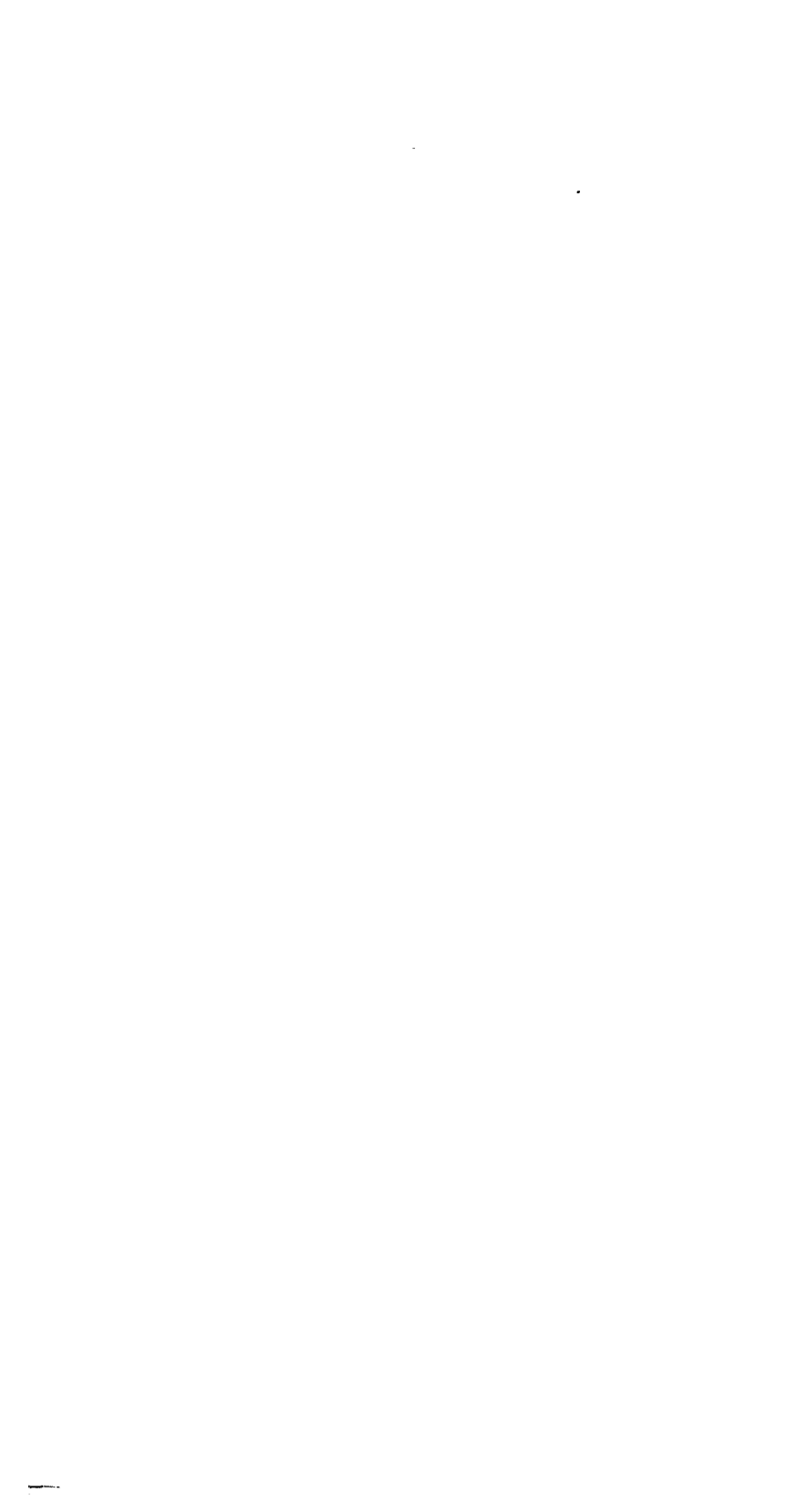
Yūng̃hāroo, Opossum.

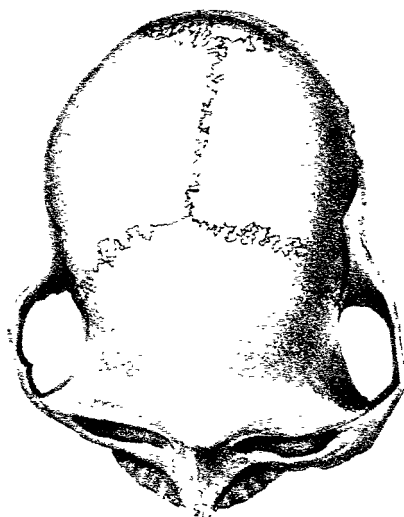
Goorg̃hilla, Kangaroo or scrub turkey.



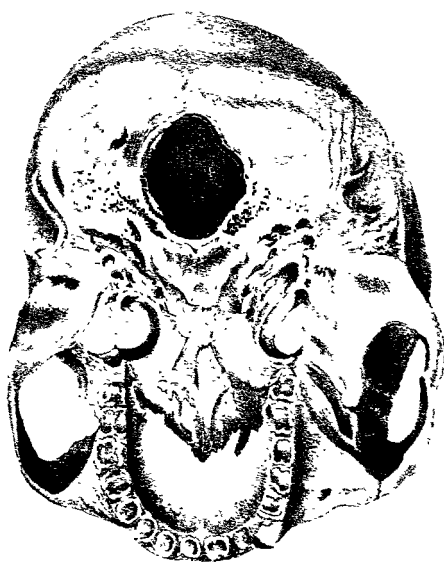
HALF SCALE

MICROCEPHALIC SKULL OF A CANARESE





4



5

HALF SCALE.

MICROCEPHALIC SKULL OF A CANARESE.
"Nº 3."

The Director read the following paper :

A BRIEF ACCOUNT of THREE MICROCEPHALES. By J. SHORTT, M.D., Inspector-General of Vaccination, Madras.

[ABSTRACT].

IN this communication Dr. Shortt describes some of the characters observed by him in three Indian microcephalic idiots, two men and a woman.

One of the men and a woman were brother and sister, of Hindoo race and pariah caste, natives of Arcot.

There was no family history connected with them, and the parents were unable to account for their imperfect condition.

1. The man of this pair, who seems to have been a harmless idiot, was five feet high, and weighed 88lbs. avoirdupois. His head measured 17·5 inches in circumference.

2. His sister, who died at the age of about twenty-five, and had borne a still-born child, was only 55 inches high, and weighed 65 lbs. Her head, when living, measured 16 inches in circumference ; and the skull, after death, 14 inches.

The other dimensions stated in the paper were :

	inches.
Height	4·4
Frontal longitudinal arc	3·25
Parietal ditto	3·25
Occipital ditto	3·25
Width of base between the points of mastoid processes	3·25
Transverse arc	8·25

In general form it was narrow and elongated, with the forehead much depressed.

3. The third individual was a Canarese by birth (plates xv, xvi). Of healthy appearance, he presented nothing remarkable until his head was uncovered, which then struck attention by its small size, conical shape, and the projection of the large ears. In intellect he was a mere idiot, though gifted with some powers of imitation.

His height was 5 feet 6 inches, weight 89 lbs. The circumference of the head was 16 inches, and the transverse arc 9·5 inches.

The Author read the following paper :

On a PATOO-PATOO from NEW ZEALAND. By SIR G. DUNCAN GIBB, Bart., M.D., LL.D.

[ABSTRACT].

THIS was a note upon a fine and perfect specimen of Patoo-patoo which had been found by the late Captain Lowe in one of the group of the Society Islands. There was little doubt, however, that the weapon had been formerly taken to that island from New Zealand. The author described the chief use made of it by the natives of New Zealand, which in the opinion of Captain Lowe was that of slaying old and infirm persons by a single blow on the top of the head, from behind, causing in every instance immediate death.

The Director read the following papers :

The HEALING ART in the NORTH of SCOTLAND in the OLDEN TIME. By the Rev. WALTER GREGOR, M.A.

THE contents of the following paper were collected in Banffshire. The same customs and beliefs were found in Aberdeenshire and in other parts of the north. In a few years they will be all gone.

I have made no attempt to support them by book authority or to trace their origin, or to compare them with those of other parts of the country, or of other nations, or to trace their origin, or to draw conclusions from them. I do not consider myself capable of giving the philosophy of them, or of drawing anthropological conclusions from them, even though I had the time to do so and the opportunity to consult authorities, neither of which is at my command. I have contented myself to gather material for those who are fitted for the difficult work of comparing and classifying the customs and beliefs of the different nations and tribes of the human race, and if this paper should contribute in any degree to illustrate the geographical range of human beliefs and human customs my labour is not lost.

CAUSES OF DISEASE.

The belief in *casting ill* on one was prevalent. This power of *casting ill* was not in the possession of all; yet few districts of the country were without one or more who were dreaded as possessing it. To such no one would have been foolhardy enough to have denied a request, however much it would have cost to grant it.

There were two modes of working ill on a person. In the one mode a small figure in human shape was made of wax and placed near the fire in such a position as to melt very slowly. As the figure melted the person represented by it wasted away by lingering disease. In the other the figure was made of clay, stuck full of pins and placed on the hearth among the hot ashes. As the figure dried up and crumbled into powder slow disease burned away the life of the hapless victim.

II. *The ill Ec.*—The power of the *evil eye* was possessed by some. It was commonly supposed to belong to certain families, and was handed down from one generation to another. It was called into use at the will of the possessors, and was exercised against those who had incurred their displeasure, or on behalf of those who wished to be avenged on an enemy and paid for its use.

III. *Prayers.*—There was a class of people whose curses, or, as they were called, *prayers*, were much dreaded. To incur their displeasure was to call down their *prayers*, and these prayers were speedily followed by bodily disease or accident, or by disaster to property, or by the miscarrying of some undertaking—by misfortune of some kind or other. The remark was quite common: “So-and-so got his leg broken aifter So-and-so curst ’im.” “So-and-so never hid a weels day aifter he fell oot we So-and-so.” “Ill healths never been oot o’ So-and-so’s hoose sin he keest oot wee So-and-so.” “The beggar-wife’s mailison hiz lichtit on So-and-so’s hoose for pittin’ hir in ’ir bairn oot in a nicht o’ blin’ drift.”

IV. *Forespeaking.*—Praise beyond measure—praise accompanied with a sort of amazement or envy—was followed by disease or accident.

V. *Hidden grave.*—Passing over a *hidden grave* produced a rash.

VI. Sudden startling news, or a sudden fright, was supposed to dislodge the heart. Slow disease followed.

CURES.

The ill ec.—Go to a ford where the dead and the living cross, draw water from it, pour it into a *cog* with three *girds* over a *crost shilling*, and then sprinkle the water over the patient in the name of the Father, the Son, and the Holy Ghost.

Forespeaking.—Pour water over a *crost shilling*, take three draughts of it, bury the remainder, and carefully preserve the shilling.

Casting the heart.—The patient was seated. A sieve for sifting meal was put on the head, and in it were laid, in the form of a cross, a comb and a pair of scissors, and over them a *three-*

girdit-cog with the girds of wood. Into this cog water was poured. Melted lead was slowly dropped from a height into the water. Search was then made among the pieces of lead for one resembling as nearly as possible a heart. If a piece of such a shape was found, it was carefully sewed into a piece of cloth and given to the sufferer, who had to carry it constantly. If a piece of the form of a heart was not found, the lead was again melted and dropped into the water, and this process was repeated till the piece of the desired heart-shape was got.

The other mode was somewhat more elaborate. The operator, who was generally an old woman renowned for her skill, set the sieve on the patient's head, and on the sieve she placed the *three-girdit-cog*, no other dish being of virtue. The comb was placed on the bottom of the cog, and the water was poured through one of the loops of the scissors into the cog. Lead was melted and dropped through the same loop. After the heart-shaped piece was found, the patient took three draughts of the water, and washed the face and hands with the remainder, which was then thrown over a place where the dead and the living cross, that is, over the public road. The patient might either bury the piece of lead on the boundary between two lairds' lands or keep it most scrupulously under lock and key. During the process the operator repeated the words: "Gehn ony thing be oot o'ts place, may the Almichty in 's mercies bring 't back."

Sleepy Fever.—There was a disease that bore the name of the "sleepy fivvers." The patient was affected with a strong tendency to sleep, and, though not confined to bed, had no inclination to engage in anything. Hence, it was said of anyone lazy at work, that he had the *sleepy fivvers*. Its detection and cure were as follows:—

The patient's left stocking was taken and laid flat. A worsted thread was taken and placed along both sides of it over the toe. The stocking was then carefully rolled up from the toe to the top, so that the two ends of the thread were left hanging loose on different sides of it. This stocking was put three times round each member of the body contrary to the course of the sun, beginning with the head. The left of two members was taken first. When the stocking was passed round an affected member the thread changed its position from outside to inside; but when the member was not affected, it kept its position. The process was gone through three times and in perfect silence. The thread was afterwards burned.

Another mode was as follows:—

The person who was to look for the fever went to a ford or bridge over which "the dead and the living cross," "atween the sin an' the sky," commonly in the gloamin, and took up three

stones. These stones were to represent the head, the heart, and the body, and were so named. They were placed overnight among the burning ashes on the hearth, and in the morning they were dropped one by one into water. The stone which it was fancied gave forth the loudest sound on touching the water indicated the part of the body in which the disease lay. The process was repeated for three nights in succession. The discovery of the disease was also its cure.

A cure for any disease was the following :—Two live pigeons were taken, ripped up, and tied to the soles of the patient's feet, sometimes wrapped in cloths to prevent the bed from being soiled. At times they were left uncovered fluttering on the patient's feet. A near relative in the early morning, or "atween the sin and the sky," removed the pigeons and carried them to a place over which the dead and the living did not cross, that is, to the top of a precipice, and left them. Some who have gone through this rite are still alive.

Epilepsy.—There were various cures for this malady.

The first time one was seized with it, let all the clothes be stripped off and burned on the spot where the patient fell.

Let the sufferer procure a shirt in which one died, put it on and wear it without being first washed.

Let blood from the left arm on the first attack.

For a doctor to draw blood from the arm of one on the first attack as his first patient brought about a cure.

If a person who saw the disease for the first time drew blood from the sufferer's little finger the malady was cured.

Another series of cures was effected by the sacrifice of a cock of a black colour. There were various modes of sacrifice.

One was to bury the bird alive on the spot on which the victim first fell, and before a second fit came on.

Another was to bury the bird below the patient's bed.

A third and more complicated cure was the following :—

The parings of the nails both of the fingers and toes, the cuttings of the hair, and ashes from the four corners of the hearth were put three times round the *crook*. A cock was buried alive along with these on the spot where the victim was first seized with the disease.

Rickets.—This disease was cured by *layan*. There were two modes of operating on the child, the one being more elaborate than the other. In the more simple of the two modes, one blacksmith was the actor, and in the more complicated mode the services of three of the same name were required.

In the more simple mode the child was taken to a smithy, when a tub was filled with water. The blacksmith, after having brought the water in the tub to as high a temperature as was

comfortable for a bath by plunging pieces of red-hot iron into it, received the child from the mother or nurse, and bathed it in the water. He also gave the child a little of the water to drink.

The more elaborate process was in this manner:—

The child was taken before sunrise to a smithy in which three blacksmiths of the same name wrought. One of them bathed it in the water-trough of the smithy. After its bath, it was laid upon an anvil, and all the tools were taken and one by one passed over it, and the use of each asked of it. It was bathed a second time, and then handed back to the mother or nurse. If a fee was exacted, the virtue of the lay was lost. The three blacksmiths must all take part in the work.

Hooping-cough.—Boil sheep's *pushlocks*, that is, the excrements of sheep, in water, and give the decoction to drink. The same decoction was used as a cure for jaundice.

Another cure was roasted mice.

Eat the food with a *quick-horn* spoon, that is, with a spoon made from a horn taken from a living animal.

A draught of water from the hollow of a detached boulder effected a cure.

Take the patient to the house of a married woman whose maiden name was the same as her husband's, and let her give the patient something to eat, and a cure will speedily follow. If the patient be taken to and from home through a wood, so much the better.

Let the sufferer be removed to another laird's property.

Let the first man seen riding on a white horse be asked what is the cure. Whatever he says, is the cure.

Let the patient be passed three times below the belly of a piebald horse.

The milk of an ass was an effectual remedy.

To ride on an ass put the disease to flight.

A more elaborate ceremony for the cure of the disease by means of the ass was as follows:—The patient was held below the animal's head, so as to inhale its breath. When this inhalation of breath had been carried on for a considerable time, the patient was passed three times under the belly and over the back of the brute. If it was possible to take the one labouring under the disease through a wood in going to the ass and in returning, so much more effectual was the cure.

Plait a straw rope—a *raip*—the contrary way, and tie the ends of it. Put the patient through the loop so formed in company with a cat. The cat carried off the disease, and died in a short time.

Ringworm.—The common cure for this disease was rubbing with silver. The modes of rubbing were various.

Put a new shilling three times round the *crook*, spit a *fastin spittle* on it, and with it rub the diseased part. Some, in addition, dropped the shilling through the patient's shirt before rubbing with it.

Another mode was first to measure the diseased part and then rub it with a shilling.

Another cure was by rubbing the spot with a silver watch.

A seventh son, without a daughter, if worms were put into his hand before baptism, had the power of healing the disease simply by rubbing the affected part with his hand. The common belief about such a son was that he was a doctor by nature.

Warts.—Go to a point where four roads meet, lift a stone, rub the warts with dust from below the stone repeating the words :

“ A'm ane, the warts twa,
The first ane 'it comes by
Tacks the warts awa,”

and the warts vanish in a short time.

Wrap up in a parcel as many grains of barley as there are warts, and lay it on the public road. Whoever finds and opens it, inherits the warts.

Rub the warts with a piece of raw meat, bury it, and as it decays the warts disappear.

Wash the warts with water that has collected in the hollow parts of a *layer-stone*.

Let the warts be rubbed on a man that is the father of an adulterous child. The rubbing must take place without the man's knowledge.

Eye-disease.—Catch a live frog, and lick the frog's eyes with the tongue. The person who does so has only to lick with the tongue any diseased eye, and a cure is effected.

Swelling or festering in the breasts of a woman giving suck.—Catch a live mole, and rub it slowly and gently between the hands till it dies. A few strokes of the hands that have done this deed over the breasts of the sufferer ensure a speedy cure. Killing the mole at once between the hands leaves no virtue in them.

Lumbago, Rheumatism, and Sprains.—Those who were born with their feet first possessed great power to heal all kinds of sprains, lumbago, and rheumatism either by rubbing the affected part or by trampling on it. The greater virtue lay in the feet. Those who came into the world in this fashion often exercised their power to their own profit.

Toothache.—Go to the churchyard when a grave is being dug, take a skull in whose jaws there are teeth, and with the teeth pull a tooth from it. A cure is the result.

Go between the sun and the sky to a ford, a place where the

dead and the living cross, lift a stone from it with the teeth, and the toothache vanishes.

Hydrophobia.—If a dog bit anyone, it was put to death, whether mad or not, as it was believed that if, at any future time, the animal became rabid, the one that had been bitten was seized with hydrophobia. If a dog was mad and bit anyone, it was put to death, the heart was extracted, hung over the fire, dried, ground to powder, and administered in a draught.

Another cure was to rip up the dog, extract the liver, fry it, and give it to the patient to eat.

On a HYPOGEUM at VALAQUOIE, ISLAND of UIST. By ALEXANDER A. CARMICHAEL. [With Plates 17, 18, and 19].

THIS underground structure was accidentally discovered ten years ago. A lad was ploughing in a sandy field, when one of the plough horses broke through a hole in the ground from which he struggled. The lad got help and enlarged the hole through which the horse's leg had thus penetrated, and found that it entered the roof of a building at a distance of three feet from the surface. This hole remained open, and it was possible to see through it the roof and part of the walls of a house nearly full of sand.

Beyond this, however, nothing was done till last year, to ascertain the nature of the structure. Meanwhile the broken end of the roof was wholly destroyed, and the slabs forming it carried away by persons in the neighbourhood, and converted into lintels for their dwellings.

In April of last year (1871) I had the place cleared out. This occupied two men three days. Not much foreign matter was found among the drift-sand, of which the house was nearly full, till the floor of native sand was reached at ten feet from the ground surface. There, however, was found a large quantity of bones, teeth, and shells, chiefly the skulls and other bones of the deer, ox, swine, and sheep, and the shells of the limpet, mussel, cockle, and winkle, and a few broken scallop-shells.*

The flat side of this shell is frequently found among the bones in cists in these islands. Invariably there is a small square hole through each side of it. In Barra it is called "diùcadan," and in Uist "liùcadaan."

* Probably the concave scallop-shell was used as a drinking cup by the inmates of the dwelling, after they had extracted the original contents. In old Gaelic poetry the "shell" is often mentioned as a drinking cup, and the modern phrase—"Cuir an t-slig chreachain mu'n cuart"—"Send round the

The use of the concave shell, as a domestic utensil, has not yet become obsolete in these parts. It is said that Biosmal Castle, which stands upon a tidal rock in Macneilton Bay, and which was the fortress residence of the old Macneills of Barra, was slated with shells, probably with the diücadan, for the clam or scallop-shell-fish is plentiful in Barra.

The bulk of the bones and shells was in the middle of the house, opposite the entrance. A cart-load, at least, was thrown up from this particular spot, while the whole sand near the floor was so much charged with them, that the farmer upon whose land it is, carried away the excavated soil for manure. Partly mingled in this heap were found charcoal ashes, broken pottery, with rude devices thereon, the tine of a red-deer, with a hole through the thick end of it like a marlin-spike, red-deer antlers, and the upper half of a small quern. The bones were black, damp, and earthy when disturbed, but crumbled and bleached after a short exposure to the atmosphere. They adhered strongly to the tongue, indicating age. A few of the remaining bones and shells were taken away, and sent to London by Mr. Campbell of Islay. These were submitted to Professor Owen, who reports of them as follows:—

“The bones and teeth sent me by Mr. Campbell of Islay, are those of a *bos var* (kyloe) and of a sheep or lamb. Shells of *Mytilus edulis* and *Pecten*. Portions of wood perforated by *Teredo* (Gaelic giurain).”

(Signed) RD. OWEN.

British Museum, 24th October, 1871.

The ground plan of this structure is crescentic, and forms the seventh part of a circle. The walls run parallel to each other. The south or inner wall is eighteen feet, and the north or outer wall twenty-two feet long. The west end is at right angles to the sides, and is five feet seven inches wide, and the east end is curved and finished off with a short obtuse angle one foot seven inches long, coming back upon the inner wall.

In the centre of the building a stone lintel crosses from side to side. The expression “pass the bottle,” which is equivalent to “pass the shell,” is equivalent to “Pass the bottle.” A repentant Gaelic convivialist says—

“Ochain o! a shlige chreachain,
'Sioma fear a th'ort an geall;
'S toil liom fhein thu shlige chreachain,
Ga d' 's i'n tolige chreach mi bh'ann.”

Ah! well-a-day, thou scallop-shell,
Many a man delights in thee;
I too, love thee, thou scallop-shell,
Though thou art the shell that ruined me.

The point lies in the similarity of the name of the shell to the word for ruin.

to side, like a beam in a modern house. At a distance of four feet three inches another beam spans the walls. From this a dome roof is raised by overlapping stones, terminating in a cap, and giving the roof the appearance of a flattish beehive. The height from the floor to the middle of the centre beam, which is lower at the inner end, is five feet, to the next beam five feet nine inches, to the point of the dome seven feet, and to the surface of the ground ten feet. The walls are built of undressed moorstone, and gradually converge as they rise. The height of the house from the base of the wall to the spring of the arch is five feet, the breadth at the floor five feet eight inches, and at the curve of the dome four feet eight inches. The convergence is therefore one in ten for each side.

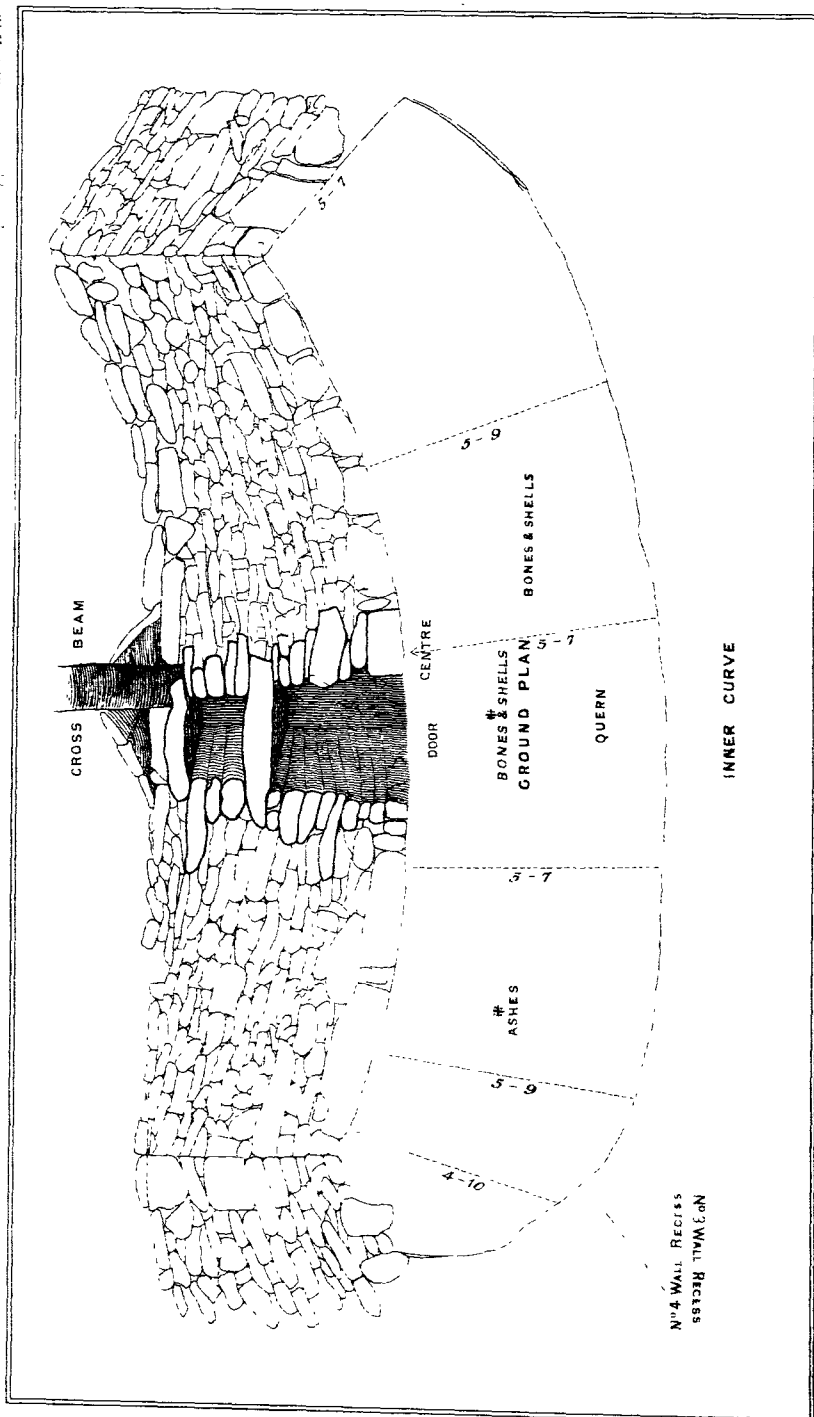
There are four recesses in the walls, one in the inner and three in the outer curve. Evidently these were used as receptacles by the inmates of the dwelling. They are about four feet from the floor, and of the following dimensions: No. I, $1.6 \times 1.8 \times 0.10$; No. II, $2.2 \times 1.7 \times 0.10$; No. III, $2.2 \times 2.2 \times 1.4$; and No. IV, $1.10 \times 1.10 \times 1.0$.

The entrance is upon the inner wall, near the middle. It is two feet ten inches high, two feet ten inches broad at the bottom, narrowing as it rises to two feet two inches at the top. The wall is two feet six inches thick, beyond which the passage is blocked up with sessile sand and loose stones.

From the curved end, a few inches above the floor, a triangular stone projects a foot or thereby, and close to this one or two other smaller stones. Possibly these stones were intended for seats; but I am more inclined to think that they are simply accidental projections in the foundation.

This underground structure then is a regular curved gallery, five feet high, four feet eight inches wide above, five feet eight inches broad below, and twenty feet long. The form and position of it struck me as peculiar and different from any other hypogeum that has come under my notice. That which seems to me to resemble it most, and of which Captain Thomas, R.N., has sent me a tracing, is at Rait, Badenoch. It is on the property which belonged to James Macpherson, of "Ossian" celebrity, and was described by Macpherson's son-in-law, Sir David Brewster.

This house is in a long broad ridge of the field, about ninety yards from the shore, sixty from the level of the land, and twenty feet above the level of the sea. The vertical section of sand over the roof contains many large periwinkles, limpets, and other shells, that could not have been blown there by the wind; consequently this cannot be drift sand. I therefore suppose that a hollow pit was dug out of the face of the ridge, that





LONGITUDINAL SECTION OF OUTER CURVE

this was lined and roofed with stone, and then that the sand was piled over the stone roof to the level of the surrounding ground for warmth and concealment. I think it is evident that the place was inhabited, from the traces of food and fire found therein.

The bones were splintered, probably to get at the marrow, and all the shells are of edible kinds. The quern would indicate some knowledge of agriculture, but animal food and shell fish seem to have been chiefly used. The absence of implements would indicate a low state of civilisation, and the natural dryness of the bones remote time. I have no opinion to advance regarding the probable age or builders of the structure which I have thus endeavoured to describe.

Mr. Campbell of Islay informed me that the Laplanders who bring their deer to the sea shore in the north of Norway, construct their dwellings thus:—Into the face of a sand bank, with a green sward above, and near the sea, a passage is cut. At the head of this passage a round pit is dug, about four feet deep and twelve wide. From the edge of this shallow circular sand pit, a conical frame-work of sticks and branches is raised. Over this frame-work, turf is laid, and sand is piled over the turf. Grass soon grows over the roof, and the house becomes a green mound, with a smoke-hole through the top, which in Gaelic is called *fair-leus*, sometimes corrupted *farlos*. The fire is made on the middle of the floor, and the inmates of the house sleep upon deer skins with their heads to the sand wall and their feet towards the fire. They live upon animal food. They break the bones, suck the marrow, and then throw the bones to their dogs, by which they are gnawed. A stone lining, added to this Lapp dwelling, would make something like the subterranean structure previously described. And thus it is that the present habits of a far-away country may serve to illustrate those of the far away times of our own. According to Sir John Lubbock's "Prehistoric Times," the Australian manufactures flint flakes, the counterpart of which I found four weeks ago among disintegrated gneiss, fallen from the roof of a partly artificial recess in an immense subterranean natural cave in Pabbey, one of the southern isles of Barra.

NOTE on HEATHEN CEREMONIES still PRACTISED in LIVONIA, RUSSIA. Communicated by the Baron de BOGOUSCHEFSKY through Sir JOHN LUBBOCK, Bart., F.R.S.

I PROCEEDED, according to your order, to the holy oak on the rivulet Micksy, which forms the division between the Govern-

ments of Pskov and Livonia. There I found a great assemblage of people, mostly the so-called Poluvertzi (*i. e.*, Tchudi or Esthonians, who were formerly Lutherans, but were afterwards re-baptised into the Orthodox Church), with their families, in gala dress: the men in kaftans (overcoats) of grey home-spun cloth, ornamented with designs stitched on the collar and at the girdle in woollen thread of various colours; the women in their long white cloth mantles with round and bell-shaped brass buttons sewn all along the seams in front, wearing on their heads ties of white linen with red edges, the long ends ornamented with fringes tied behind and hanging half way down the back. They were either seated on the grass or standing around the oak (which is a half dried, scorched, miserable specimen of the oak). Many of them had brought wax candles (or tapers) with them, and were fixing them all around the tree and on its branches.

After waiting some time, his reverence the Priest of Taylovo arrived, assumed the sacred robes, and proceeded to sing a "*moleben*" (a kind of canticle or hymn of prayers which is sung in the Orthodox Church in honour of various saints), saying instead of the usual "Holy Saint, pray the Lord for us," "Holy Oak Hallelujah pray for us," etc. After this, incensing the oak tree all round, reading the Bible, viz., as is done in the ordinary "*molebens*" to Saints; and then the priest gave the cross to be kissed by the people. During mass the tapers were lighted on the oak tree, the people throwing themselves on the ground and adoring the Holy Oak, the priest partook of some of the fare offered to him by the congregation, collected some money and still more cakes of rye flour baked with and without potato, and then proceeded homewards.

The people remained till late at night, drinking wine (vodka spirits), eating cakes, lighting new tapers on the oak tree, dancing, and otherwise amusing themselves, until at last everybody got tipsy, and a regular "orgie" continued, until all thought it best to retire home.

There is in this spot also a holy stone somewhere which is worshipped at the same time, but I could not see it, and did not venture to appear a stranger to the ceremony by asking questions as to where it was.

(Signed) JAMES PIGGUL, Steward of the Estate Panikovitz.

The Director read the following paper :

The WESTERLY DRIFTING of NOMADES from the FIFTH to the NINETEENTH CENTURY. By HENRY H. HOWORTH. Part XI. *The BULGARIANS.*

THE name Bulgarian fills a notable place in the annals of the Byzantine Empire. Among the scourges of the Roman frontier the Bulgarians took a front rank. The name is not unknown in modern history. By it the young and progressive Slavic race that occupies Thrace and forms a material element in that congeries of difficulties, "the Eastern question," is now known. Not the least strange among vicissitudes of nomenclature is the fact that the name of a tribe of Turanian nomades should designate in modern times a stout race of Arians with hardly a trace of Turanian mixture.

It will be profitable to occupy a short space in disentangling the difficulties that surround Bulgarian ethnology, and in throwing some more light on the crooked subject of the affinities of the nomades who overthrew the Roman empire.

A few words first about the name Bulgarian. The older writers explained it as the dwellers on the Volga, but a very slight criticism proves this to be a faulty derivation, the name Volga being a very modern one, and probably derived from the Bulgarians. Herodotus seems to have confused the Volga and the Iaxartes, to both of which he gave the name Araxes. In the later classical times the Volga was well-known, and was then called Rha. Ptolemy so calls it in the second century. Agathemerus in the third century calls it Rhos. Ammianus Marcellinus calls it the Rha. This name Rha is still given to the river by some of the Finnic tribes, and it is very probable the Greeks derived it from such a source. With the advent of the Turks into Europe, we get a new name for the Volga. Menander, who describes their first arrival, calls the Volga the Attila. Etel Itil or Idel is the name the Turks give it, meaning, in their language, river or great river; thus they talk of the Iaik Idel, Tana Idel, Tcholman Idel (the Kama); the Volga they called Ulug Idel *i.e.* great river, or simply Idel, and this is the name we find given to the Volga in the Byzantine historians. Ahmed Ibn Fozlan is the earliest Arab author who names the great river. He describes the city of Bolghar as being situated on the river Itil. Ishtakri, Ibn Haukal and Masudi all call it the Itel; the latter also names it the river of the Khazars. Edrisi calls it the Russian river. The later Arabs, such as Ibn Batuta, Ibn Fozlan, etc., recur to the old name of Itel or Atel.

The mediæval friars who travelled to the court of the Khan of the Mongols use the same name; thus William of Ruysbrock

calls it the Etilia. Marco Polo calls it the Herdil, which is a corruption of the same word. This is the form we meet with in the pages of the Venetian traveller, Jehosaphat Barbaro, who wrote in the fifteenth century. He calls the Volga Erdil.

Turning elsewhere, we find that the Kazan Tartars still call the river Idel. The Chuvashes and Bashkirs call it Adal or Asli Adal, *i. e.*, great river; and the Kalmucks call it Ischil or Ischilgol. The Cheremisses call it the Jul, while the Mordvins, as I have already said, still know it by the name it was known by to Ptolemy, namely, the Rau.

We thus see that the name Volga is an unknown appellation of the great eastern river to the Greeks and the Byzantines, to the Arabs, and to the dwellers on its banks. Whence then came the name? From the Russians. The Russian Slaves so call the river, and they have apparently so called it since the days of their earliest chronicler, Nestor, who wrote at the beginning of the twelfth century.

Richard Chancellor, in the middle of the sixteenth century, thus speaks of it: "The country of Moscovie hath also very many and great rivers in it, and is marish ground in many places, and, as for the rivers, the greatest and most famous amongst all the rest is that which the Russes, *in their own tongue*, call *Volga*, but others know it by the name of *Rha*." ("Hakluyt Voyages," i, 247-8.)

From the Russians the name has passed into the pages of western writers. Several etymologies have been suggested for the name, none of which are accepted as satisfactory by Muller, "Ugrische Volkstamm," i, 105. Although the Arabs do not speak of a river Volga, they do speak of the town Bolgher and the country Bulgaria. It has, therefore, been suggested (see Muller, *op. cit.*, 106) that the river took its name from the town or its inhabitants. The river of Bulghar, or of the Bulgarians, is very like in form to the river of the Khazars, the river of the Russians, the sea of the Khazars, the sea of the Chwalisses, which are well-known synonyms for the Volga and the Caspian, and in this etymology of the name of the Volga I am disposed to concur.

But this does not conclude our difficulty. It only removes it a little further away. What is the etymology of Bulgarian? Schafarik thus gives the various forms of the name: Bulgari, Bulgaris, Bulgarkh, Burgari, Burgian, Borgian, Burgan, Borgan, Borgal, Borgar, Burugundi, Wurugundi, Wurgari, Vulgari, Vulgaris, Bl'garin, and Bl'gare. Among these forms, that of Bulgari or Bulgares is by far the most frequent and probably the correct one. Schafarik goes on to say that it may be compared with those of other Finnic Uralian (I prefer to say Hunnic) tribes also ending

in gari, gori, guri, and giri, as Ungari, Hungari, Ungri, Ogori, Sabirugori, Ounguri, Hunoguri, Uturguri, Kutriguri or Kotraguri, Saraguri, etc. Detaching this common particle gori or gari, we have as the specific root of Bulgari the root Bul. That this is the root of the name is rendered almost certain when we remember that another set of names for the Bulgarians is Bulari, Byleri, Bileri, Biliri. An often quoted instance of the use of one of these latter is that of the Franciscan traveller, Du Plano Carpino, when he says: "The Mordvins and Bileres, who are the inhabitants of Great Bulgaria." The town of Biliarsk probably takes its name from them.

It is probable that several of the Hunnic names of tribes are derived from the names of chieftains, the Kotraguri from Kotrag, Uturguri from Uturg, etc. Now, it is curious that in a passage from the Arabic author, Cazvini, quoted at length below, it is said that the Bulgarians derive their name from a Mohamedan saint named Bela, by whose assistance they defeated the Khazars. Bela is a name well known among the Magyars, the dominant race of the old Hungarians, which was, as we shall try to show in the next paper, not distantly related to the Bulgarians. If this etymology be admissible, then Bulgarians mean subjects of Bela, as Nogais means subjects of Nogai, and the example is only one more instance of a law of nomenclature which is very consistent in the desert.

There are two Bulgarias, Great Bulgaria on the Volga, and Bulgaria south of the Danube. Great Bulgaria, on the Volga, is a well-known name in mediæval geography. The author, translated by Ouseley as Ibn Haukal, says, "the river Itil traverses the country of the Russians, then that of the Bulgarians, then that of the Burtasses, and falls at length into the sea of the Khazars." Ibn Fozlan also says, "the Itil comes from Russia and Bulgaria, and flows towards Khasaria." Nestor, the prime chronicler of Russia, says, "From Russia you can go by the Volga to the kingdoms of the Bulgari and Chwalises." Snorro, the Norse chronicler, also names this district Bulgaria. The Minrite traveller Carpino says, "this country of Kumania has immediately north of it, after Russia, the Mordvins and Bileres, that is Great Bulgaria." William of Ruysbroch, who traversed the Nogay steppes in 1253, says the Etilia comes from Great Bulgaria, which is in the North. . . . Those of Pascatir (*i. e.*, Bashkirland) have Great Bulgaria immediately on their west.

Great Bulgaria was, in fact, the large province governed from the city of Bolghar, not far from Kazan, and including the Khanate of Kazan, and a large stretch of country to the north.

It is very clear that the Great Bulgaria of earlier times was much further to the south than the later Great Bulgaria.

Theophanes tells us that the Oungundurs, the *Bulgars*, and the Kotrages occupied the country situated to the north of the Euxine and the borders of the Mæotis between the Tanais and the Atal (*i. e.*, the Don and the Volga), and that their principal dwellings were between the Mæotis and the Kuphis (*i. e.*, the Kuban), in which the Bulgarian fish called xystus was caught. This, he says, is the Great Bulgaria (Theophanes, ed. Paris, 296, also Klaproth's "Tableaux Historiques," 260). . . . Again, in another place at present I must speak of the primitive dwelling-place of the Huns, who are also called Bulgars. On the banks of the Mæotis and of the Kophines (*i. e.*, Kuban) is situated Great Bulgaria. The Great Bulgaria of the earlier Byzantines, then, was the isthmus between the Mæotis and the Caspian, and the country to the north the home-land of the Huns. It will be seen that Theophanes, in the passage already quoted, identifies the Bulgars with the Huns, and the evidence collected by Zeuss and others is overwhelmingly in favour of this identification being right. In another place Theophanes says the Kotragi and the Bulgarians were of the same race. We know that the Kotragi were Huns. The panegyrist, Cassiodorus, in bepraising one victory uses Bulgarian as a synonym for Hun (Zeuss, "Die Deutsche und die Nachbarstämme," 710). Procopius, who does not use the term Bulgarian, speaks of them under that of Hun, using Hun in describing what others assign to Bulgarians (Zeuss, *op. cit.* 711).

Kobrat, the stem-father of the Bulgarian kings, is sometimes called King of the Bulgarians. He is also styled King of the Hunugundurs, who, as is well known, formed one moiety of the Eastern Huns.

The names of the early Bulgarian Chiefs are Hunnic in form, and they in fact continue the Hunnic history under a new name. As is the rule among nomade tribes, a more vigorous clan heads the new confederacy, and gives it its name, or the name of some noted chief becomes the new title of his people. After the researches of Zeuss and others, one need not enlarge more upon the widely accepted conclusion that Hun and Bulgarian were synonyms for the same race. I shall reserve the consideration of the question of what this race was until I deal with the Huns in the next—the concluding—paper of this series. I will only say here that I believe they were neither Turks nor Ugrians. Reserving the discussion of this point, I shall now trace out the history of the Bulgarian invasions of the Roman Empire, etc., remembering that the Bulgarians proper were, like the Mongols of later days, only the leaders of the armies, the bulk of which was Slavic or Ugrian. In 487 they made their first venture on the Danube and were

severely defeated, their chief Buzas being killed. (Klaproth *op. cit.* 261). In 493 the invasion was repeated, and this again in 498-9. The coalition of tribes that formed the invaders on the latter occasion is specified by the Byzantine writers as the Hunno-vendo-bulgars. It was winter, when the frozen Danube offered no barrier and the Roman fleets were powerless. Aristus the governor of Illyria marched against them with only 15,000 men; a battle ensued near a river named Zurta. The Romans were badly beaten, 4000 of them were put *hors de combat*. Their defeat was assigned to the incantations of the Bulgarian Shamans or sorcerers, and it was further remarked that their army was followed by a troop of carrion birds as if they had made a pact with death. (See Thierry, "Attila and his Successors," i, 204). In 502 they repeated their invasion of the empire. In 505 we find a body of Bulgars engaged as mercenaries by the Romans in their struggle with the Ostrogoths in Pannonia, and when Vitalian, governor of Thrace, rebelled in 514 against Anastasius, he had among his troops both Huns and Bulgarians. In 558 the Avars invaded eastern Europe, and among their first conquests were the Bulgars, and the latter remained their vassals until their chief Kubrat (634-641), called also Prince of the Hunugundurs, freed them from the yoke and made a treaty with the emperor Heraclius. On his death his heritage was divided among his five sons. Batbai, the eldest, remained with his people in their old country, where he shortly after had to submit to the Khazars. Kotrag, the second son, crossed the Don and settled on its western bank. The fourth settled in Pannonia, where he joined the Avars. The fifth invaded the west and advanced as far as Ravenna in Italy, the third, named Asparuk, having crossed the Dniester and the Dnieper, settled in a place called Ouklos Nicephorus (Klaproth *op. cit.* 261-2). Schafarik suggests that this name may be the old Slav word A'gl or Ougl=Latin *angulus*, and representing the *entra rios* between the Pruth, the Danube, and the Pontus, now called Budzuk or Bessarabia. (See "Slavische Alterthumer," ii, 163 note.) Thence the Bulgarians began to invade the Roman Empire. In 768, the emperor Constantine Pogonatus marched against them, but he hesitated to give them battle, fell ill and left the army, which soon after followed him in disorder. The Bulgars under their chief Terkel, who was probably a son of Asparuk, pursued them and crossed the Danube. They advanced into Moesia as far as Varna, subdued the country, and made tributary the seven Slavic tribes who lived there. Their conquest was bounded on the south by the Balkan range, on the east by the Euxine, and on the west by the country of the Avars, of whom Belgrade was a frontier town; on the north

their dominion extended over Walachia and south-eastern Hungary. (Schafarik, "Slavische Alterthumer," ii, 164 and 165.)

In this large area they formed only a dominant tribe, such as the Turks now form in European Turkey; the great bulk of the population, especially south of the Danube, was Slavic. They gave their name to their settlement, which was henceforth known as Bulgaria. The Slaves there adopted the name of Bulgarians, but in return they, the invaders, a mere fragment although a dominant fragment, adopted the language, the customs, and eventually the religion of the conquered, and it would be hard to find more typical Slaves than the modern Bulgarians.

About 784 the exiled emperor Justinian Rhinotmetus, who had taken refuge with the Khazars, landed at the mouth of the Danube, and was well received by Terbel, to whom he promised his daughter in marriage. They entered into alliance and together marched upon Constantinople at the head of 15,000 troops. Justinian was again placed on the throne, "and Terbelis retired after sweeping away a heap of gold coin which he measured with his Scythian whip." (Gibbon, vi, 79.) Under the emperor Philippicus in 711 they advanced to the gates of Constantinople. In 714 they made a treaty with Theodosius the Third, by which Meleona in Thrace (probably Menalion in the Balkan) was made the frontier of the two kingdoms. In 755, the Bulgarian king Kormesios plundered the country to the environs of the eastern metropolis, but was defeated by Constantine Copronymus, who drove them towards the Balkan. About 762, the royal house of Kubrat came to an end, and the Bulgarians elected one Telexis to be their king. Either because his accession was not very acceptable to the Slaves, or for some other reason, we now hear that 208,000 of those subjects of the Bulgarians migrated towards Asia. (Schafarik, ii, 172.) Telexis ventured upon an expedition against the empire, but having been defeated was put to death by his own people. His death was followed by a series of disturbances which are enumerated by Schafarik. I shall not continue the catalogue of the struggles of the Bulgarians with the empire, which belong more to history than to ethnology. About the middle of the ninth century, the fusion of the Bulgarians proper and the Slaves seems to have become complete, for after this period the proper names of Bulgarians preserved by the Byzantine annalists are Slavic. (Klaproth, "Tableaux Historiques de l'Asie," 262.) So late as 813, Simeon Logotheto thus speaks of them. "Cruunus more gentis sacrificio instructo (profano et vere dæmoniaco, says Theophanes) homines ac pecora plura inundavit, tinctisque ad maris litus pedibus ac aqua lotus lustratoque exercitu faustis

morum vocibus ominibusque exceptus, per medium pellicum gregem iis venerationis ergo procumbentibus ac laudantibus processit." When they were converted to Christianity (860-866) Mahomedans were found among them, as there were among their brethren on the Volga; they wore turbans in their churches. The biographer of St. Demetrius, who wrote in the eighth century, distinguishes the Bulgarian language from the Slavic. (Schafarik, *op. cit.* ii, 167 and 168.) I have said the followers of Terkel who invaded and gave its name to Bulgaria on the Danube were only a fifth part of their race. We are told that another fifth part passed into Italy and settled in the neighbourhood of Ravenna. (See Theophanes in Zeuss, "Die Deutschen und die Nachbarstämme," 720.) These were probably the Bulgarians who are mentioned by Paul the Deacon as allies of Alboin the Lombard invader of Italy. Another fifth settled in Pannonia. In 630, Fredegar the annalist tells us there fell out a great strife between these Bulgarians and their neighbours the Avars. The latter were at length successful, and the defeated Bulgarians, 9000 men with their wives and children, left Pannonia and went to the Frank king Dagobert, requesting that he would find them lands. Dagobert ordered the Bavarians to allow them to winter in their country. When they were dispersed among the Bavarians, Dagobert by the advice of the Franks ordered the Bavarians to make a general massacre of their guests in one night. This accordingly was done, and of these Bulgarians, Altek with 70 men, their wives and children, alone escaped, who saved themselves in the Vendic march, after which they lived for many years with Walluk the Duke of the Vends. Paul the Deacon thus continues their history. "Per hæc tempora Bulgarorum dux Alzeco nomine, incertam quam ob causam, a sua gente digressus in Italiam pacifice introiens cum omni sui ducatus exercitu ad regem Grimoaldum venit, ei se servituum atque in ejus patria habitaturum promittens. Quem ille ad Romoaldum filium suum Beneventum dirigens ut ei cum suo populo loca ad habitandum concedere deberet præcepit. Quos Romoaldus gratanter excipiens eisdem spaciosa ad habitandum loca quæ usque ad illud tempus deserta erant, contribuit, scilicet Sepianum Bovianum et Isenicam (three places in the mountains east of Naples) et alias cum suis territoriis civitates, ipsumque Alzecom, mutato dignitatis nomine, de duce Gastaldium vocitari præcepit. Qui usque hodie in hiis ut diximus locis habitantes quanquam et latine loquantur, linguæ tamen propriæ usum minime amiserunt." This accounts for another fifth of the original Bulgarians.

We have thus accounted for three divisions of the Bulga-

rians ; a fourth, as I have said, settled on the Don under Kotrag, the second son of Kubrat. They were probably the Kuttur-guri of the Greek writers. They apparently gradually drifted westward and joined the Avars. The remaining section of the Bulgarians remained in its ancient seats on the Maeotis under Batbaia. These were doubtless the Unoguri and Urogri or Uguri of the Byzantine writers, the Ogor of Priscus. Theophanes, who describes the division of the Bulgarians among the five sons of Kubrat, tells us they remained there in his day. In 650 the Khazars crossed the Volga, and among their first victims were these eastern Bulgarians. It was at this time apparently that they were driven towards the north and founded the city of Bolghar and the empire dependent on it. In order to understand the history and ethnology of these Bulgarians we must make a wide digression.

It would be difficult to find an area of equal extent on the earth's surface whose ethnography during the historic period is so perplexing as that of Great Bulgaria. Its name, the relations of its present and ancient inhabitants, and its race-changes, have all been subjects of contention. The easiest way of solving the difficulty and the one that has been most generally followed, is to say : Its present inhabitants are Ugrians (that is Finns), or Turks, and Finns or Turks they have probably been in all time, and thus there has come to be a general agreement among ethnologists that the race which is historically so interesting, inasmuch as it drove or led the army of Slaves who occupied ancient Thrace in the seventh century and gave it the name of Bulgaria, is either Turkish or Finnic. I believe this view to be most incorrect, and to be a grave stumbling-block in the way of understanding European ethnography in the seventh and earlier centuries. In order to prove this we must examine in some detail the tribes that occupy ancient Bulgaria and its border land.

At present, the most notable population of Great Bulgaria are the so-called Kazan Tatars, who have been described in great detail by Tornerelli ("History of Kazan") and others.

Their history is well known. The city of Kazan, from which they take their name, was founded by Ulu Mohammed at the break-up of the Golden Horde, and it was then that these Tatars, who were merely one fraction of the Golden Horde, first permanently occupied Great Bulgaria. They had often overrun it before from early times, but it is probable that previous to the foundation of Kazan, they had no permanent settlements there. I have shown in a previous paper that the Tatars of the Golden Horde are mainly descended from the Comans or Kiptchaks, called Uzes and Ghos by the Arabs. I may add that I am now convinced that the Kazaks or Kirghiz Kazaks,

the Hakas of the Chinese, belong to precisely the same stock, and represent pretty faithfully the condition of the Comans before they were sophisticated by contact with civilisation. At the invasion of Batu Khan, these Comans, as we have previously shown, were the masters of the steppe country round the head of the Caspian.

After the Kazan Tatars, the most important tribe of Great Bulgaria is that of the Chuvashes, by no means a decayed and struggling tribe. Its numbers and habitat are thus tabulated by Latham, "Native Races of the Russian Empire," p. 93.

Government of Kazan	-	-	300,091
„ Simbersk	-	-	84,714
„ Samara	-	-	29,296
„ Orenburgh	-	-	8,353
„ Saratof	-	-	6,853
„ Viatka	-	-	17
			<hr/>
			429,954
			<hr/>

Their language is a corrupt form of Turkish, and is most nearly allied to that spoken by the Tatars of Baraba and the Yakuts. This is a well ascertained fact, and although until lately they have often been confounded with the Cheremisses, etc., and treated as Ugrians, yet so long ago as 1736 that worthy Swedish traveller Strahlenberg pointed out their true relations (*vide* his "Table of Vocabularies"). They first appear under the name of *Chuvashes*, in the "Russian Chronicles" of the latter part of the fifteenth century. They were then continually in alliance with the Kazan Tatars in their raids upon Russia (see Karamzin's "History," vols. v, vi, and vii, *passim*). It has often been remarked that their name is not found in the ethnological data of Nestor, who wrote in the twelfth century, and who was remarkable for his accuracy and his general information. It is therefore almost certain that they invaded Russia after he wrote his work.

I have said that the language of the Chuvashes is most nearly allied to those of the Yakuts and the Baraba Tatars, and that they are in fact a fragment of the Siberian Turks. At present they are isolated from these their nearest relatives, being separated from them by the Bashkirs and the Nogays. Now it is remarkable that the peninsula on the Irtysh, where the city of Tumen, the former capital of the ancient Siberian Khanat, stands, is called by the Russian chroniclers Tschuvatch or Chuvatch. This at once gives a clue to the etymology of the name Chuvash or Tschuvatch, hitherto a *desideratum*, and it

also discloses to us their original abode. Here they would be in contact with their nearest relatives, the Turks of Baraba, and the Black Khirgises or Buruts, and they were probably the so-called Gautschinzi, who Strahlenberg tells us were the ancient inhabitants of the Khanate of Siberia, before the foundation of the Golden Horde (Strahlenberg's "Russia," 266, note).

It was in 1237 that Batu Khan first attacked the tribes of the Middle Volga, the Mordvins, etc., and in 1259 advanced still further north, and overran the country of the Cheremisses, etc. (D'Ohsson's "Hist. des Mongols," ii, 113 and 118). So great was the terror inspired by them, that Torfæus describes how in the reign of Hakon the second, there arrived in Norway great numbers of Permiens who had fled from the invader. They were assigned lands round the gulf of Malanger (D'Ohsson, ii, 185).

On the death of Nogay, the great chief who gave his name to the Nogay Tatars, we are told by Raschid ud din, that his sons retired to the country of the Bashgurdes and Kelardes (D'Ohsson, *op. cit.*, ii, 761). The many clans who obeyed him seem to have scattered in Siberia, where they became the ancestors of the Tatars of Tobolsk, Tura, and other Siberian towns. Traces of Nogay still remain in this area; thus the steppe on the right bank of the Irtish is still known as the Nogai steppe (Fisher, "Hist. of Siberia," and "The Asia Polyglotta," 219). At the same time, other tribes of Nogays overran the Bashkir area, where we find one of the four main divisions of the country called the Nogay Road ("Asia Polyglotta," 221). I believe the modern Bashkirs to be mainly of Nogay blood, and their history is undistinguishable from that of the Nogays, until the main body of the Nogays crossed the Volga.

This invasion of Siberia and Bashkir-land by the Nogays caused, I believe, the thrusting out of the previous inhabitants. These previous inhabitants were, I believe, the Chuvashes, and we thus explain how and when the Chuvashes came to occupy their present position in Russia. Previous to Batu's western campaign they lived in Bashkir-land, and the country to the east.

The Chuvashes are not the only Turks who live on the borders of Bulgaria; besides them are two other tribes, the Meshkerekaks and the Teptyars. The Meshkeriaks are named by Nestor, he names them among the Chudish or Ugrian tribes, who lived in the neighbourhood of the Mordvins and the Cheremisses. There they were still living at the end of the fifteenth century. They have since migrated eastwards among the Bashkirs on both sides of the Urals. Their name is of the same form as Ostiak, Votyak, etc., and means the inhabitants of

the district Mestchera, which lies between the Oka and the Upper Sura. There can be little doubt that in Nestor's time they were, as he says, Tschudes or Fins, and they retain many traces of their origin. Their language is now Turkish. This they have doubtless adopted from their Baskhir neighbours, a language with whose idiosyncracies theirs agrees more thoroughly than that of the Tschuvashes (see Muller's "*Ugrische Volkstamm*," i, 160, and ii, 281). This change has doubtless taken place since their migration.

The origin of the Teptyars is well told by Dr. Latham ("Nationalities of the Russian Empire," 156), "When the Khanate of Kazan became Russian a mixed multitude of Turks, Cheremis, Votiaks, Tschuvash, and Mordvins, fled to the east of the Ural. Out of these has arisen a population which the Turks call Teptyar, a population which, like the Mescheriaks, kept to the side of Russia during the Bashkir rebellion, and became a privileged population accordingly. They are Mahometan, rather than Christian, and probably pagan rather than Mahometan. Their habits in general are those of the Baskhirs. Some of them are employed as carriers in the salt trade between Orenburg and Kazan."

Putting aside these three populations, whose presence *as Turks* in Europe we have shown is so recent, we must now consider the Ugrian population of Great Bulgaria. The most notable tribe of Ugrians here is that of the Cheremisses. After the Fins, the Cheremisses are the most cultured of the Ugrian peoples, and bear many proofs about them of a descent from ancestors who could boast of a history.

"They have regular villages, with the village organisation of a headman or elder, for the settlement of disputes and for their simple legislation. There are houses, too, which approach the Russian standard of comfort; with property on the part of the owners to match."—Latham's "*Nationalities of Europe*," i, 218.

Pallas describes them at some length. I need not extract what he has to say about their dress and appearance. In regard to their houses, he says, they are superior to those of the Votiaks, Mordvins, and Fins. The greater part have a summer as well as a winter room, with a covered arcade or gallery and a staircase. They are excellent agriculturists, and abound in grain; their flour mills are ingenious, and resemble those of the Tatars of Kasan. They have plenty of horses and cattle, and are also great bee-masters (Pallas, "*Voyages*," v, 37, etc.) According to their own traditions they were formerly ruled over by their own princes (Muller's "*Ugrische Volkstamm*," ii, 464). They occur very frequently in the Russian annals, after the decay of the Khanate of Kazan, and were by no means despicable foes.

Herberstein describes them as, in his day, nomadic robbers, living between the Viatka and the Volga. These facts show us that we have to deal with a vigorous and by no means savage race. They now number nearly 200,000, and their habitat is mainly the government of Viatka and Kasan; but they are found north as far as the government of Perm and Kostroma.

Dr. Latham says, "There is no shadow of evidence that favours the notion of the Cheremis being other than an old indigenous population; indigenous and aboriginal to the forests in which it now occurs. It is the populations around that are recent, the Turk and the Russian, if not the Chuvash. The Cheremis' area may have extended at one time further eastward, further northward also. It may have reached the Uralian mountains and have been conterminous with the occupants of the gold districts."—"Native Races of Russian empire," 90. I go with Dr. Latham, at least so far that I make the Cheremisses to be the oldest occupants of the area who are now found there; the term aborigines is unsatisfactory, nor is it correct in this case. I have shewn that the Chuvashes are comparatively recent intruders into this area. I believe the Votiaks are so also. In a previous paper I have mentioned the tradition of their migration from the south-west, where on the river Kasanka is the fortress of Arskoi Perigor which they claim as their old metropolis, but I believe they came still further. They were formerly known as Voten, Bomurt, or Vomurt, which makes Sjogren surmise with some justice that the name is a mere corruption of the national name Ud or Ood compounded with "murt." The name Voten is the same as that of the Vod who are now found in the St. Petersburg government, the district of Vatland being named from them. As has been shewn by Sjogren, Vod and Vess were two names for the same people. (See my paper on the Fins). The Vod are not mentioned *eo nomine* by Nestor, but the Vess are both by him, by the Mahometan historians, and by Jornandes who calls them Vasina. Nestor further tells us that the Vesses lived on the Bielo Osero, the well known lake of northern Russia. This then was the homeland of the Vods. Thence they spread westward into the St. Petersburg government. Thence also, as I believe, they spread down the Volga to Arskoi Perigord, a very short journey. In support of this may be quoted the appearance and physique of the Votiaks, which are quite different from the southern Ugrians, the Mordvins, Cheremisses, etc., etc., and approximate to the Finnish branch of the family of which the Vod are a subdivision. In support of this let me quote a passage of Dr. Latham, who, *en passant*, is anything but prejudiced in favour of race movements. The Votiak he says is more like the Finlander of Finland in per-

sonal appearance than is the case with the generality of Ugrians ; and as the Finlander of Finland is the strongest and stoutest of his family, the Votiak form contrasts favourably with that of the Chuvash and Cheremish. From these they are said to be easily distinguishable as much however by the hair as aught else. The Votiaks are the most red-headed men in the world, fiery red is the epithet. Light flaxen or yellow is also frequent, and after this the darker shades of brown. The beard is reddish, the skin light. In temper also the Votiak resembles the Finlander, being steady, sturdy, laborious, and agricultural. The Votiak accumulates property, saving but hospitable. The women weave, spin, and make felts ("Native Races of the Russian Empire," 53). The Fins proper, as I shewed in a previous paper, are descended from the ancient Bearmians of the Dwina. By identifying the Votiaks with the Vesses and planting them on the Bielo Osero, we plant them in immediate contact with their nearest relatives, and I have no hesitation in doing so, and in this neighbourhood they probably lived from very ancient times, for the Budiui of Herodotus, whose red hair and blue eyes were so remarkable and whose name Budini has the same root as Votiak, cannot well have been others than their ancestors. In the northern country watered by the upper Kama, we have the Syrianiens and Permeki. In regard to these races, I may say that since writing the paper on the Fins, I have examined Sjogren's paper on the Syriamens, a most exhaustive and valuable essay, and I must correct one or two errors I was dragged into by trusting to other authorities.

He has convinced me that the Syrianiens and Permeki represent the ancient Petchori, the borderers of the great river Petschora, who are frequently mentioned in mediæval times and were the north-eastern neighbours of the Bearimans. He has also shown, I think, that the topography of the country about the lower Ob has a Syranien nomenclature. All this agrees with the Samoyede traditions I referred to in my paper on the Fins. Lastly he has questioned the derivation of the national name of the Syrianiens and Permeki, namely Komi, must, from the river Kama. He rather connects it with the Vogul term Kum which means people, just as Mari the collective name of the southern Ugrians does. The Syrianiens have apparently been long occupants of their quarters about Tcherdyn and Solikamsk, the Great Permia of the Russians, for they give it the definite name of Komum or land of the Koms. Thence they stretched towards the north and north-east to the borders of the Polar Sea. Tcherdyn was probably their southern limit, the great mart where they exchanged the products of their hunting and fishing with their southern neighbours.

After excluding the Votiaks and thus limiting the southern range of the Syraniens, we have a large space to fill up, and we may confidently fill it up with the Cheremisses who, I believe, once peopled all the country watered by the Lower and Middle Kama and Viatka, and the greater part of the governments of Kazan, Veatka, Perm and Ufa. I may mention that Pallas tells us that Veatka is probably a Cheremiss name.

Nestor puts the Cheremisses in contact with Meshkeriaks, the Mordvins, and the Muromas. Let us now say a few words about these tribes.

The Meshkeriaks are now Turks, but they have been so only a comparatively short time. In Nestor's time they were undoubtedly Ugrians. Their change of language took place, there can be little doubt, at the time of their great migration. When this took place is not known exactly; Muller says they still lived in their old quarters on the outer Oka (where they were placed by Nestor) at the end of the fifteenth century. They have since moved to the Southern Urals among the Bashkirs, and have adopted their language and many of their customs. The original home of the Meshkeriaks, from which they in fact took their name, is the district of Meshtchera which stretches from Moskhansk Sura as far west as the river Oka. (Muller "*Ugrische Volkstamm*," i, 160 and ii, 281).

We may without much doubt name the Volga and its tributary the Mologa as the southern boundary of the Vesses in the time of Nestor. With their focus and centre at the Bielo Ozero, they probably extended from the Ladoga Sea across the country past the Vosse Sea, (which may derive its name from them) until they overlapped with the Cheremisses.

South of the Volga, which from Kasan to the town of Mologa runs for 12 degrees from west to east, the Ugrian tribes are connected together by having the common name of Mari or Mere in various modified forms. They have also a community of dialects and customs, which favours the opinion that they are closely connected. Since the days of Nestor, this Ugrian area has naturally been much circumscribed and has been largely invaded by the Slaves.

In Nestor's day a Ugrian race occupied the environs of the seas or lakes of Rostof and of Kleszczin, to which he gives the name of Mera. The name occurs as early as Jornandes among the tribes conquered by Hermanric, he calls them Merens. Adam of Bremen calls them Mirr. No Ugrians remain in this neighbourhood now. We have no means at hand for testing how far their habitat extended, we only know that Sjogren, a great authority, in his "*Essay on the Syraniens*,"

page 303, has collected a number of names which are found in the governments of Moscow and Turr, which are of undoubted Ugrian etymology, such as Moskova, Protova, Wasusa, Schoscha, Bolwa, Schaua, Obscha, and others, which prove that a Ugrian population once occupied this area, how lately may perhaps be guessed from the fact that the reported founder of Moscow of the Slaves lived in the 12th century. (*vide id.* 303.) If there were Ugrians there at that date, they were probably a branch of the Mera.

Let us proceed. Nestor says that on the Oka where it falls into the Volga were the Muromas. Ma is the Ugrian appellation for country, as in Baraba properly Barama Suommeuma, etc. If we detach this particle we have the name Muro left, which is the same as Mari and Mera. The town of Muroma on the Oka still preserves for us a trace of this people, otherwise they also have given way to the encroaching Slaves and have disappeared. Close to them he places the Chermishes and the Mordvins. Let us now turn to the latter. Their name otherwise written Mordia-aither contains the root Mari or that of Murd, as in Komi Murt, etc., both meaning near. Jornandes names the Mordens among the tribes subdued by Hermanric, the great Gothic king. Constantine Porphyrogenitus mentions the land of Mordia as being ten days' journey from Patzinacia and one from Russia. Carpino calls them Morduins, and Marco Polo Mordui.

The Mordvins are divided into two main sections which are of old date. They are the Mokshads and the Ertsas. The Dominican traveller, William of Ruysbrok, tells us that on crossing the Don he met with the tribe Moxel, rich in swine, honey, and wax, as well as in furs and falcons, and more to the east with the Merdas or Merduas. Moxel and Merdas are undoubtedly the later Moksha and Ertsa. Jehosaphat Barbaro, in describing the Mordvins, refers to them as Moxier. The Ertsas are mentioned, *eo nomine*, by Ebn Haukel the Arab geographer, who tells us they lived west of the Bulgarians. Their king resided at Ertsa (probably the modern Arsama). He says he had not seen any stranger who had been among them, as they killed all whom they caught in their country. They descend the Itil (*i.e.*) the Volga, with their merchandise, but give no information about their country. It is from Ertsa that we get sable and black fox skins, and also lead. D'Ollsson, "Les Peuples du Caucase," 84). It will be noted that Ruysbrok calls them Merda; now there is a tribe mentioned by the Arabs, which has been a puzzle, so far as I know, to all inquirers. Their name is generally written Bertas or Burtas, but Von Hammer says it ought to be spelt Merdas or Murdas.

(See Von Hammer's "Hist. of the Golden Horde.") I have no doubt this is the same name as that given by Ruysbrok. It will seem that their description is in fact that of the Ertzas. According to the Arabs, they lived on the lower Volga, and they were agriculturists and lived in scattered wooden houses. It was from their country, which stretched for a distance of fifteen days' journey, that came those furs of black and red fox so renowned under the name Burtas sien. Those of the black fox cost a hundred dinars each, and were held more precious than sable, martin, and in fact all other kinds of furs, and were used only by princes who ostentatiously displayed mantles, caftans, and caps, made of the black fox of the Burtasses (Masoudi, and Ebn Haukal, quoted by d'Ohsson, "Les Peuples du Caucase," 73. Their language differed from that of the Khazars, Russians, and Bulgars (*id.* 79).

We will now turn to the modern account of the two divisions of the Mordvins, which is contained in Pallas' "Travels," i, 104. He says the Mordvans of Schadin, many of those inhabiting the villages near the Moksha, and the upper countries of the Sura, as well as those living on the banks of that river, are of a different tribe from those who live on the Piana, and in the government of Nijni Novogorod. They gave themselves the name of Moksha, which in their language is the common name of all the Mordvins. They call the others Ersad or Erdsad, who do not repudiate the name. There are only a few Ersanian villages in the country inhabited by the Mokshas; but the two are found mixed, and often in the same village, on the banks of the Volga, the Soka, the Cheremschan, and in the districts near the governments of Kazan and Orenburgh. These are, however, probably recent colonies. Even there, however, the two tribes have preserved their idiosyncracies. The tradition among the Mokshas is that they formerly inhabited the banks of the Mokshas and its tributaries, and that their villages extended to the Oka, that they were then governed by their own petty princes or elders. They differ from the Ersaniens chiefly in the pronunciation of their words, in certain peculiar customs, and in the dress of their women. These are enumerated by Pallas; he goes on to say that red and blonde shades of hair are less common among them than among the Ersaniens.

I have now surveyed the various Ugrian tribes who lived either in or on the borders of Great Bulgaria. They have probably been there from a very early date long before the arrival of any Bulgarians proper there. To this arrival we must now turn.

I have said that it was apparently the invasion of the Kazars that drove the Eastern Bulgarians towards the Kama, where

they founded the city of Bulghar. There the Arab writers of the ninth century found them, and it is from them that we derive most of our information about them; especially are we indebted to Ibn Fozlan, who made a journey from Baghdad to Bolghar in 921 A.D., and whose narrative has been given by M. Fræhin, in the first volume of the sixth series of the "Memoirs of the St. Petersburg Academy."

Bulghar is not large, says the author, translated by Ouseley as Ibn Haukal. Its population and that of the neighbouring town of *Suwar* does not reach ten thousand souls. Its houses are made of wood, but are only inhabited in winter. In summer the Bulgars live camped out in the fields in tents. (The custom still prevails among the Volga Ugrians).

The cold there is very great, and snow is on the ground all the year round. Kazvin says that the Bulgars support cold better than all other men; this is attributed to the food they eat, namely, honey and the flesh of beavers. The longest day there is twenty hours long, also the longest night. Ibn Haukal says "that the night is so short in winter, that before a man can walk two parasangs, daylight is back again, and that the days are so short that a Mussulman can barely say four Namazs before they are over." Some of the Bulgars are Christians and others Mahometans, and the latter have many mosques at Bulghar, and a grand mosque at Suwar. (Ibn Haukal). The king of the Bulgars is a Mussulman. He embraced Islamism during the khaliphate of El Moctedia-b-illahi.

Some say he took this resolution in consequence of a dream (Maçudi). Cazvini, citing the lost chronicle of the cadhi El Bulgari, says that the king was persuaded to do it by a Mahometan saint. When the latter arrived at Bolghar, the king and queen were dangerously ill. He promised that they should be restored if they were converted. Having recovered, they performed their vows, and a portion of their subjects followed their example. This conversion so irritated the king of the Khazars, that he marched with a large force against Bulgaria. When the armies were in presence of one another, the Mahomedan saint told the Bulgarian warriors to have courage, and to charge the enemy with the cries of Allahu Ekber! Allahu Ekber! (God alone is great) which they did, and defeated the enemy. Shortly after, the king of the Khazars proposed peace, and said he had seen giants mounted on grey horses, fighting on the side of the Bulgarians. "These were the troops of God," said the saint. They say this saint was called Bela, and that from him the Bulgarians received their name.

Whatever credit this tale may deserve, we are on safer ground when we relate from Ibn Fozlan how the king of the Bulgarians

named Alman, the son of Shilki Balthear, wrote to the kaliph, praying him to send him people who could teach him the faith, others to build him mosques and a fortress where he could take refuge when his territory was invaded. The khaliph willingly despatched one of his officers named Ahmed Ibn Fozlan, who set out in June 921. He shall tell his own story: "We had arrived at about twenty-four hours' journey from the king of the Slaves (*sic*), when he sent four of his vassals, his brothers and sons to meet us. They brought us bread, meat and millet, and then sped us on our way; when we arrived within two parasangs of the king, he came out to meet us; he alighted and bowed his head to the ground thanking and praising God. When he had distributed the silver coin he had in his sleeve among us, he ordered some tents to be pitched where we were to live. It was Sunday, the 12th Muharrem (*i.e.*, the first month of the year), 310, when we arrived, (*i.e.*, the 10th May, A.D. 922). The journey from Dschordschaina (*i.e.*, Urjendy or Khiva), the capital of Khuarezm, took us seventy days. We remained in the jurts fitted up for us until the middle of the week, while he summoned the grandees of the country to hear the khaliph's letter read. On the Saturday we spread out the two coverlets we had brought with us, put a beautiful saddle on the king's horse, robed him in a black garment, and put a turban of the same colour on his head. (Black was the costume worn by the family of the Abbasidæ). I then pulled out the khaliph's letter. The king, although a very corpulent man, read it standing, and did the same with the letter of the vizier Hamid-ben-el-Abbas. Whereupon his followers scattered silver among us. We then brought out the remaining presents and presented them to his grandees, and also gave his wife, who sat as is customary beside him, a dress of honour.

"He then took us into his yurt, where he sat alone on a high seat covered with Greek cloth of gold. The princes sat on his right, and his children in front of him. We took our seats on his left. At his command a table, on which was some roast meat, was put before him. He cut off a slice and ate it, then a second, then a third. The fourth he handed to myself, before whom there was immediately brought a lesser table. For it is the custom that no one should hold out his hand to eat, until the king hands him something, upon which a waiter brings him a table. A portion of food was thus handed in turn to the princes who sat on his right, to whom was brought a table, and then to the guests in the order of their rank, until each person had a table before him. After the meal each one took home with him what remained on his table; but before we rose to depart, mead, called El-sidshu, was handed round to us.

"Before our arrival the public prayer (khutbe) was offered in these words: 'God bless the king Vlatavaz, the king (melik) of the Bulgarias.' I observed to him that God alone was king (melik), and that it was not seemly that any one should be so styled from the pulpit. 'Thy patron,' I said, 'the Emir of the Faithful has ordered that the following prayer should be recited from the pulpits at morning and evening prayer: God bless Thy servant and Thy khaliph, Dshafar the Imaum, Muktedir billah the Emir of the Faithful.'

"I urged him that the names of himself and his father should also be named in the prayer. But he answered, my father was an unbeliever, I was one also, I may not any longer use a name given me when I was an unbeliever. I will adopt the name of my patron the Emir of the Faithful, Dshafar.

"He thereupon took the name of Dshafar to himself, and gave his father the name of Abdullah. For the future, therefore, the public prayer ran thus: 'God bless Thy servant Dshafar, the son of Abdullah, the emir or prince of the Bulgarians, and the protector of the Emir of the Faithful.'

"I saw so many wonders in the land of the Bulgarians that I am scarcely able to relate them. Thus, the first night of our arrival, just before sunset, the sky grew very red, and we heard sounds in the upper air and a dull rumbling. I raised my eyes up to see, when there hovered over me a fiery red cloud; out of it came noises and rumblings, and in it there appeared forms of men and horses, and in the hands of the men-shadows were bows and lances and swords. I either saw it, or thought I saw it. There then appeared a second cloud of the same kind, in which there were also armed men on horseback, and they fell upon the others like a squadron of horsemen upon another. We were so frightened thereat that we turned with prayers to the Almighty. But the people of the land, who were standing round, wondered at our behaviour, and broke into a loud laugh. The conflict in the clouds continued until nightfall, when the clouds were dissipated. When we mentioned it to the king, he told us that his forefathers said these spirits were the followers of demons and unbelievers of old times, who, each evening struggled together in battle, and had done so from time immemorial.

"In my jurt I had as a companion the king's tailor, a Baghdad man, with whom I spoke on various matters; we had done so for half-an-hour one evening, and were expecting the call to evening prayer, when we heard the muezzin sounded. We rose, and I noticed that the morning was already beginning to dawn. I asked the crier to what prayer he summoned us. He said to morning prayer. But what has become of the evening prayer,

I said. We say the afternoon and evening prayer together, he said. But where is the night, I asked. You have already passed it, he said, and it has been still shorter than this; already the nights had begun to lengthen. He complained that he, for a whole month, had not shut his eyes, lest he should sleep through the time of morning prayer; and actually if you put a pot of meat to cook on the fire at evening prayer, it is not cooked at morning prayer time. I, myself, have experienced how terribly long the days are at one time of the year; the days are long and the nights short, then *vice versa*.

"In the second night after our arrival, I saw quite an insignificant number of stars scattered in the sky; I think there were hardly fifteen. The glow that follows sunset never dissipates, and the darkness is so slight that you can recognise another person at over the distance of a bow shot. The moon scarcely rises above the horizon before she is again obscured by the arrival of morning. The king told me that there lived three months' journey beyond his country the people Wisu (*i. e.*, the Vesses of Nestor, see the paper on the Fins), where the nights did not last an hour.

In the Bulgarian land, I noticed that at sunset all the lowlands and mountains grow red, and whichever way I looked there rose a sun like a great cloud, and the redness did not disappear until the sun had reached the highest point in the sky.

"The indigenes told me that in winter the night is as long as the summer day, and the days as short as the summer night. So that if one sets out in the morning for the Itel (*i. e.*, the Volga), which is not quite a parasang distant, before he can reach it night has arrived and the stars are out.

"These people, *i. e.*, the Bulgarians. prognosticate events from the howling of dogs, and thus foretell a fruitful year, happiness, and prosperity.

"I saw great quantities of serpents among them (probably coluber nutrix, Fræhn). Often ten or more are found coiled together on the branch of a tree. They do not kill them, nor do they do anybody any harm.

"The apples which grow there are green and very sour, but the young girls eat them and grow fat on them. But nothing grows so well as hazel nuts, of which I have seen woods of forty parasangs in extent.

"I also saw there a tree unknown to me, of unusual height. Its trunk is without leaves; its top like that of a palm; its leaves are delicate but mixed with one another. They bore a hole in a certain part of the trunk of this tree, from which there flows a liquid which exceeds honey in sweetness. They collect it in a vessel. This liquor, like wine, makes one drunk when

taken in excess. (Fræhn conjectures that the tree here referred to is the birch; but surely the description is that of the spruce fir). Their chief food consists of millet and horse flesh, although their fields produce wheat in abundance.

Such is the naïve and ingenuous narrative of Ibn Fozlan. I shall supplement it with some facts from other sources. Fræhn has taken some pains to show that the embassy described by Ibn Fozlan did not introduce Mahommedism into Great Bulgaria. The narrative itself says as much, for it treats of the changes introduced by the envoy as reforms, and not as the introduction of the faith there. It may be, and indeed is, pretty certain that the king and court had hitherto been other than Mahometans, perhaps, like their relatives the Khazars, they were either Christians or Jews: but there can be little doubt that Islamism was well known at Bolghar long before this date. Fræhn concludes that this introduction took place probably by means of stray Mahomedan missionaries about the beginning of the eighth century. (See "Essay on Three Coins of the Volga Bulgarians." "Memoirs of St. Petersburg Academy," i, 188).

Russia leather is still known in Bukharia as Bolghar. An active commerce was carried on with Khuarezen, and thus the products of the east were distributed in north-western Europe. The northern borderland of Persia was then ruled over by the Samanid dynasty, and among the many hordes of Cufic coins that this commerce carried to Bolghari and thence distributed over the river banks of northern Russia, over Scandinavia, Iceland, and Scotland, very many are coins of the Saman dynasty. When the Bulgarian court became Mahometan, a local coinage was instituted at Bolghar, which imitated very closely the Samanid coins. These coins of Bolghar are rare, but several have occurred, one of them in Sweden. (See Fræhn's Essay, already cited).

The history of Bolghar is in a great measure lost; we may hope to recover some of it from coins, and if the work cited by Kazvin, as the "History of Bulgarians," composed by the Cadhi el Bolghari, should be discovered, we should of course know it in considerable detail. I will cite the few facts that are at present known. The king who sent the embassy to the khaliph in 921 and 922 was called Almus. This name is the same as the father of Arpad, the Hungarian hero, and confirms the position I shall insist upon in the next paper, that the Magyars, the dominant tribe among the Hungarians, were of the same race as the Bulgarians. Almus is called the son of Shilki Balttuar. In the year 338 of the hejira (*i. e.* in 949-50) we have a coin of a Bulgarian king who is called Talib, the son of Ahmed, and in 976 A.D., we have another who is styled Munim, son of Ahmed,

probably a brother of the former. This is the list of Bulgarian kings, so far as we know, and it perhaps includes the whole dynasty, from their conversion to Islamism to the attacks of the Russians, which put an end probably to the prosperity of Bolghar.

Nestor tells us that in 964, Sviatoslaf made an excursion to the banks of the Oka and the Volga, in 965 he attacked and vanquished the Khazars, and in 966 did the same to the Wætishes who inhabited the Oka and the Wætka. Ibn Haukal says that in 969 (perhaps his date is wrong) the Russians reached Bolghar, as well as Khazeran, Itel, and Semendar; and he afterwards adds, there are no longer any Inner Bulgarians (Ibn Hanka thus distinguishes them from their brethren on the Danube) nor Burtasses, nor Khazars, for the Russians have attacked them all, and have captured their lands. Those who have escaped them have been scattered in the neighbouring country. Their love of country does not permit them to migrate further away, and they live in hopes that the Russians will grant them peace and be content with their submission. (D'Ohsson, "Les Peuples du Caucase," 80).

The continuation of Nestor mentions several subsequent wars between the Russians and Bulgarians in the course of the twelfth century, and calls the capital of the latter Briachimov. In 1233 the Mongols invaded the territory of Bulgaria, and in 1236 sacked its capital. The ruins of Bulghar still remain in the district of Spask and the government of Kazan, about twenty-eight leagues south of the city of Kazan. Among its ruins many inscriptions have been found; of forty nine referred to by Pallas, forty-six are Arabic. They are tomb stones, and contain simply a verse from the Koran, the name of the defunct, and the date. Twenty-two are of the year 1226, others in various years from 1222 to 1341. Three are in Armenian, and bear dates respectively in 1162, 1576, and 1579. Pallas has given a graphic account of the ruins.

The ruins of Bolghari are to be found about twenty-eight leagues south of the modern city of Kazan, in the district of Spask. They are situated about two leagues from the banks of the Volga. In their midst is a small village of a hundred houses which still bears the ancient name. The site of the old city is enclosed by a rampart and ditch, six versts in circuit. The chief ruin is that of a Mahometan tower or misgier, built of beautifully worked stones, and sixty to seventy feet in height, with a staircase mounting to the top. This tower stands at the corner of a square enclosed by a large wall, the ruins of either a fortress or a mosque. Other remains are described by Pallas, one-ruin is strangely named by the inhabitants Gretcheskaia

Polaia or the Greek palace. Is this a tradition of some emporium of Byzantium that formerly existed here? Besides his descriptions, Pallas has furnished us also with plates of the chief ruins.

In describing the coins found in the neighbourhood, he says, that beside those with Arabic and Cufic inscriptions, are some of base silver, very badly struck, having on one side little stars and other ornaments, and on the reverse some little raised points with a circle enclosing a symbol of some kind. This is like those still used by the Bashkirs in lieu of signatures. With the coins are found objects in gold and silver well wrought.

I saw all kinds of toys made of brass and iron, as well as tools in the shape of pickaxes, of which many seem to have been fixed in wooden handles. I saw no arms, and they told me such were rarely found. I saw many round plates of iron badly wrought, having one side polished and the other ornamented rudely sculptured with foliage; these were very like those described by Strahlenberg (probably mirrors? H. H. H.)

In digging in the ground one finds a great number of pierced discs of earthenware; they are chiefly of brick colour. Others, smaller, are of a green colour; others again enamelled in different colours; fragments of beautifully glazed pottery are also found. An amateur who would pass a portion of the summer here, and gain the confidence of the inhabitants, would meet with very beautiful antiquities.

It is a very long time since Pallas wrote, but so far as I know the amateur is still to be found. Will not the language of the Nestor of Russian travellers induce some *blasé* antiquary, weary of hunting in our poor soil, to try this virgin mine? One thing is very certain, until Cherdyn, Bolgari, and the old Khazar towns on the Volga are examined, we shall be only wading in the dark in trying to explain the archaeology of the Norsemen, whose culture and wealth we can, I think, prove were derived from this neighbourhood. Nor is there much less romance in the frost-bitten and neglected ruins of Bolghari. The remains of the ancient mart whence the luxurious powers of the ancient and early mediæval world drew its furs, its ivory, etc.; where Norse pirate met Armenian and Jewish merchant from Bokhara; where the Sigurds and Erics of the Baltic saw and coveted some of the wealth of the khaliphs and the Greeks, which made them dare to traverse the Mediterranean borderland in search of booty and adventure.

The President having announced that this was the last meeting of the Session, and that due notice would be sent to all members of the arrangements for the next session, the meeting adjourned until November.

ANTHROPOLOGICAL MISCELLANEA.

On the EXISTENCE of a RACE of RED MEN in NORTHERN AFRICA and SOUTHERN EUROPE in PREHISTORIC TIMES. By C. H. E. CARMICHAEL, M.A., F.R.S.L., M.A.I.

DURING the session for 1872 of the Italian Anthropological and Ethnological Society, of which Professor Mantegazza is President, a theory was propounded by Professor Gennarelli which may perhaps be considered worthy of discussion among English anthropologists; as I am not aware of its having been raised in this country.

Professor Gennarelli's arguments in favour of the prehistoric existence of a race of Red-men in Europe, are based partly on his exposition of various myths, as *e. g.*, those of the Libyan Hercules, of Antæus and Busiris in Africa, of Geryon in Spain, of Cacus and his abolition of human sacrifices on the Septimontium in Italy, and partly on what he considers to be historic evidence in the hieroglyphs of Egypt, and the pottery of Etruria, in both of which men are coloured red, and women with a lighter shade.

In the absence of any obvious reason for altering the natural colour, Professor Gennarelli takes these points as being in favour of his hypothesis. Both vases and sarcophagi in the Necropolis of Cære, in Etruria, exhibit the same phenomena, representing men with a bright red colour, women with a lighter shade, and giving both almond-shaped eyes.* Gennarelli does not deduce from this the conclusion that the Etruscans themselves belonged to that type, but that they embodied in these representations the tradition of a pre-existent type as a myth, in the same way that in all religions, languages, vestments, and instruments are handed down from times in which they prevailed generally. Besides this ritual preservation of a lost type of man in Italy, Gennarelli urges that we have evidence of the existence of races there which were neither Aryan nor Semitic, under the various names of aborigines, Siculi, Liguri, Umbri, etc., and we have also inscriptions in non-Aryan tongues. These peoples, says Gennarelli,† were akin to the Iberians, who inhabited Spain before the Aryan invasion. This I understand to be a general proposition, as to the existence of pre-Aryan races in Italy and Spain, and not an assertion that the Iberians were red-skins, which would be contrary to such evidence as we possess. Moreover, it is one of Gennarelli's points, that the name of an ancient people is often preserved by the country they inhabited, though subsequently peopled by a different

* Occhi di taglio obliquo, orig. in "Archivio per l'Antropologia e la Etnologia," vol. ii, fasc. 2, p. 223.

† "Archivio l'Antropologia," etc., *loc. cit.*

race, and he is careful in marking this, *e. g.*, in the case of the Umbrians, pointing out that the "*gens antiquissima Italiæ, qui imbris superfuere,*" cannot have been the same people who wrote the Engubine Tables and spoke an Aryan tongue.

Discussing the evidence afforded by monuments, Gennarelli asserts that the sepulchres of the earliest races of Italy have certain characteristics in common, which mark them off from those of the later migrations of Celts, Pelasgians, etc.

In all the more ancient monuments he finds men represented with a red skin and almond-shaped eyes, a type and a physiognomy which shows the profound difference that existed between the prehistoric races, and the historic races that came from Asia. There is also to be noticed as characteristic of the early races, the archaic style of their tombs, and the entire absence of bas-reliefs and pictures of mythological, heroical, or Trojan subjects. In support of this thesis, Gennarelli quotes a tomb containing four sarcophagi, discovered in the ancient Agglla (or Cære), by Marquis Campana; some portable pictures in terra cotta discovered by the same archæologist in another tomb; various bas-reliefs in terra cotta representing warriors, chariots, horses, and battles, discovered in the same necropolis by Cavaliere Agostino Jacobini, in 1871; with other bas-reliefs found in the necropolis of Orvieto; terra cotta bas-reliefs discovered at Velletri in 1784; and several bronze figures found in the district of Montecchio. All the figures, whether in the bas-reliefs or in the pictures, present, according to Gennarelli, the characteristics already noticed. He estimates the number of monuments belonging to the later epoch, during which the Asiatic races prevailed, but which represent man as red or black, at about 100,000, and he explains this fact as a ritual usage of the white races to preserve the memory of a truth and a primitive fact, citing Plato in support; who affirms that the type of the Egyptian statues, owing to ritual reasons, had not been changed for 10,000 years, and therefore art remained stationary.

On the supposition that his theory is correct; Gennarelli says that if the cradle of these red races of Europe was Africa, there cannot at that time have been any white inhabitants in that continent,* and he suggests that the cradle of the Egyptian race (which represents itself as red on its own monuments), was southern Arabia, which he thinks is confirmed by the name Hemiar (mod. Arabic, Abmar) signifying red, according to M. Fresnel, which is borne by that part of Arabia. And he finds further support for this suggestion in the existence of the Himyarites or Hemerites, deriving their name from Hemiar, one of the first kings of ancient Yemen, and links the Himyarites with the Erythræans and Edomites as being all red races, adding that several tribes of the Kabyles and the Berbers of Mount Atlas were also red.*

* In another place he divides the early African races into black, brown, and copper-coloured, and suggests that the Phœnicians belonged to the last division.

† Unfortunately no reference is given as an authority for this statement, and I am unable at present to verify it.

In the Egyptian monuments, Gennarelli appears to find the red colour more defined after a certain period. The earliest monuments, he says, bear figures of a colour approaching to yellow, and less brown than those of a date posterior to the Hyksos. According to Lepsius those of the first dynasty are of a clear yellow (*gialli-chiara*), while those of the eighteenth dynasty are reddish (*rossastri*). It may also be remarked that the type of the earlier dynasties is more robust; full and muscular than that of the later period. From the twelfth dynasty downwards, the figures are more slender. We thus obtain evidence, says Gennarelli, of a serious modification in the course of ages, not only of the colour of the skin, but also of the form of type, if indeed these characteristics do not belong to different races and types.

A further proof that the Egyptian race was red, Gennarelli finds in the colour of the modern Copts, of whom he says that those who exhibit the least intermixture are reddish (*rossastro*). Burkhardt, moreover, says of the Nubians, in the district of the Pyramids, that they are a fine race of a deep red colour (*color rosso cupo*), with nothing of the negro in their profile, and with oval faces. Pugnet describes the colour of the Egyptians of the Saïd as a dusky red (*rouge obscur*), while he says of the Copts that they have a tawny yellow skin (*ton de peau jaunâtre et fumeux*), like the Abyssinians.

Having established to his own satisfaction the existence of a red race in Northern Africa and Southern Europe, Gennarelli proceeds to investigate the question whether they were akin to the red races of America, which he thinks probable, and supported by the traditionary existence of Atlantis. He then suggests what seems contradictory to his previous Arabian hypothesis, *viz.*, that the evidence of the relative positions of the three successive capitals of Egypt—Thebes, Memphis, and Alexandria, goes to show that the primitive inhabitants, who made the Thebais their first station, came from the equatorial Lake region of Speke, Grant, and Baker, through Upper and Lower Nubia, and that the way of communication with America, *via* Atlantis, lay by the coast of Zanzibar, and the White and Blue Nile.

In support of the hypothesis of kinship between the red races of Europe and America, Gennarelli adduces: (*a*) the existence of pyramids in Egypt, America, and Etruria; (*b*) of labyrinths in Egypt, America, and Etruria; (*c*) of the title "Children of the Sun," borne both by the Incas and Pharaohs; (*d*) of mummies in Egypt and America, and images of mummies in Etruria; (*e*) of hieroglyphic languages in Egypt and America; (*f*) of languages having a similar structure in America, Iberia, and Etruria (Humboldt thought there were affinities between the Basque and Etruscan); (*g*) of the Nile in Egypt, and a Nile region in Guatemala, from the Cordillera of Sonusco to the Pacific; (*h*) of canopies and sacrificial vases in Egypt, Mexico, Yucatan, and Peru, with names similar to the deities they represent; (*i*) and of the root "Atl," which in its original signification he asserts to belong not to the European but to the American languages.

Gennarelli further supports his theory by the assertion that animals of American origin, unknown to Africa, are to be found among the Egyptian hieroglyphics, and in the paintings or sculptures on the vases and monuments of Etruria. He also states his belief that it is possible to effect a chronological arrangement of the various monumental remains of Egypt, Etruria, Chaldaea, Assyria, and Persia, and by the help of archæology, comparative philology, and the natural sciences, to determine the question whether or no the primitive monuments which precede the age of the historic races belong to peoples akin to the latter. In conclusion, Professor Gennarelli repeated his conviction that the geographical basis is of no value whatever for ethnographical definitions in Italy, which was inhabited by far too many races to admit of it. Thus, he insisted, it will never do to confound the Siculi, Liguri, Umbri, and Aborigines of historic times with the primitive races which inhabited the same regions, his theory being that the later races adopted the name of the country which, as in other cases, survived its original bearers.

In like manner, he urged, Albania is so called from the first halt made there by the Celts, although many centuries have elapsed and many races have succeeded them.

In the discussion which followed the reading of Professor Gennarelli's paper (printed in vol. ii, Nos. 2 and 4, of the "*Archivio per l'Antropologia*"), exception was taken to some of the points raised by the author, *e. g.*, as to the root *Atl*, which was shown to be purely Greek, and therefore the name Atlantis can have no relation whatever to the American root *Atl*, signifying water; also it was pointed out that *φοῖνιξ* means purple rather than red, and hence the name Phœnician could not, as Gennarelli had stated, indicate a red race.

These discussions had the important result of bringing about the formation, by the Italian Anthropological and Ethnological Society, of a committee for the study of the primitive races of Italy, promoted by, but not confined to, the members of that society. To this committee, composed as it is of the most eminent anthropologists, archæologists, and philologists of Italy, such as Professors Fabretti, Gastaldi, De Gubernatis, Gennarelli, Giglioli, Mantegazza, Niccolucci, Pigorini, Vannucci, Count Giancarlo Conestabile, and Count Giovanni Gozzadini, the President of the Bologna International Congress of Anthropology and Prehistoric Archæology, we may fairly look for the gradual elucidation of the most interesting questions connected with the history of man in Italy. Papers have already been communicated by Count Conestabile, Professor Fabretti, and other members, and it is satisfactory to know that the Minister of Agriculture and Commerce, Castagnola, by letter under date of 29th January, 1873, expressed his willingness on the part of Government to assist the investigations of the committee, by printing and circulating ten thousand copies of a circular letter, with tables and list of queries, sent to him by Professor Mantegazza, as President of the society and committee. Whether further research and discussion may tend to confirm or refute the hypothesis developed by Professor Gennarelli, which I have

endeavoured to lay before you in this paper, there can be no doubt that science will gain by the more extended study to which the mere raising of the question has already given rise, and I shall be amply rewarded for my small share in the work, if I shall be thought to have brought to your notice an anthropological question which has not as yet specially attracted your attention. You will at least, I hope, have gained some insight into the vitality of anthropological studies in Italy, which is one of the many good results that may fairly be attributed to the impulse given by the Bologna Congress, and which may recall to your memory the fact that to Italy is due the foundation of these International Congresses which have now become a part of the systematic study of the science of man in all countries.

The AINOS. By C. H. E. CARMICHAEL, M.A.I.

As this race has been the subject of communications to the Anthropological Institute, and a portion of the Miscellanies of the April number of the Journal for 1873 is devoted to an account extracted from a German periodical, it may not be without interest if a brief note be made of the views expressed by professor Giglioli, recorded in the "*Archives per l'Antropologia e la Etnologia*" of Florence, vol. ii, p. 116.

Professor Giglioli laid before a meeting of the Italian Anthropological and Ethnological Society a set of photographs of Ainos, together with the photograph of a Japanese daimio, so as to enable the Society to compare the two types. It is stated in the "*Archivio*," that the photographic group of Ainos exhibited on this occasion was executed at Hakodado, and represented several heads of tribes, and that it was believed to be the only photograph of this singular race that has yet reached Europe. Professor Giglioli mentions the point in connection with the tradition preserved by the Ainos as to their descent, which does not appear in Herr Von Brandt's account, viz., that they have descended from a wooden doll (*bambola*), which swam from Corea to the then uninhabited island of Yezo. This probably indicates Corea as the part of the mainland from which they came to the islands.

Giglioli suggests an ethnological connexion, which again is not to be found in Von Brandt's paper, viz., with the lower race of Russians. He bases this view, which he promises to develop more fully in future researches, upon the features of the physiognomy, and the enormous growth of whiskers and beard, and however great the apparent difficulties of such a theory, he believes it to be the most logical one hitherto started. He remarks as worthy of note that in all Japanese works the semi-divine heroes of Nippon, are invariably represented as more robust and hairy men than the modern Japanese, and considers this a sign that it is the primitive race of Japan which has now retreated into the interior of Yezo; and such appears to be also the opinion of Von Brandt.

THE JOURNAL
OF THE
ANTHROPOLOGICAL INSTITUTE
OF
GREAT BRITAIN AND IRELAND.

NOVEMBER 11TH, 1873.

Professor BUSK, F.R.S., *President, in the Chair.*

THE minutes of the previous meeting were read and confirmed.

New members were announced, viz.: PHILIP ARTHUR SCRATCHLEY, Esq., Inner Temple, Barrister-at-law; DAVID JOHNSON, Esq., M.D., 84, Old Kent Road.

The following presents were announced, and the thanks of the meeting voted to the respective donors.

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- From the ACADEMY.—*Bulletin de l'Académie Impériale des Sciences de St. Petersburg.* Vol. 17, Nos. 4 and 5. 4to.
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- From the SOCIETY.—*Jahrbuch der K. K. Geologischen Reichsanstalt.* Band XXIII, January, February, March, April, May, June, 1873. 8vo. *Verhandlungen*, ditto, January, February, March, April, May, June, 1873. 8vo.
- From the AUTHOR.—*Researches into the Bushman Language.* By Dr. Bleek. 8vo.
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- From the SOCIETY.—Transactions of the Geological Society of Glasgow. Vol. IV, Part 2.
- From the ASSOCIATION.—Journal of the East India Association. Vol. VII, No. 2.
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 From CLIFFORD SMITH, Esq.—Spiritualism answered by Science. By Edward Cox, Serj.-at-Law. 8vo.
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FOR THE MUSEUM.

- From E. C. REED, Esq.—Two Casts of Wooden Tablets with hieroglyphics found in Easter Island.

Mr. GALTON, F.R.S., submitted a proposal, which had received the sanction of the Council, for obtaining anthropological statistics from schools, etc., as follows :

PROPOSAL to APPLY for ANTHROPOLOGICAL STATISTICS from SCHOOLS. By FRANCIS GALTON, F.R.S.

NOTWITHSTANDING the many efforts made by statisticians, materials do not yet exist from which the physical qualities of the British people may be deduced with such precision as is needed for various theoretical inquiries. We do not know whether the general physique of the nation remains year after year at the same level, or whether it is distinctly deteriorating or advancing in any respects. Still less are we able to ascertain how we stand at this moment in comparison with other nations, because the necessary statistical facts are, speaking generally, as deficient with them as with ourselves.

Yet an important part of this information seems easy of acquirement, if it be sought for in the right direction and not on too large a scale. My object in these short remarks is to point out a method by which I believe the Anthropological Institute might successfully promote the collection of very important materials, and be enabled to publish general results of high value.

The Anthropological Institute could never undertake to deal with individual cases in the way that the census does ; but it might deal with the authorities of a moderate number of homogeneous societies, each representing a well-defined class, if such could be found, who would undertake the collection and classification of their own statistics. Then, by referring to the census, we should learn the proportion which these several classes bear to the entire nation, and be enabled to combine

the returns in that proportion, so as to obtain figures true for the kingdom at large.

Homogeneous groups of boys, girls, and youths already exist in several large schools, under conditions which offer extraordinary facilities for obtaining the required statistics. The masters are trustworthy and intelligent in no common degree; they are in habitual face to face communication with every pupil; and the general organisation of schools is in every way favourable to collecting full and accurate statistics. As different grades of schools represent different orders of the community, their statistics, combined on the principle already explained, ought to give an excellent picture of the younger portion of the British nation. In these short remarks I shall dwell exclusively upon schools, because I believe their authorities might be induced, in not a few instances, to co-operate heartily and with great intelligence; and if they did so, the object of the inquiry and the value of the results would become very generally appreciated. The boys when they grow up into men would retain favourable recollections of the whole procedure, and application might then be made to Universities, Factories, and other large bodies of adults, with greater probability than at present of obtaining the required information.

I suppose the authorities at each school not only to make the necessary measurements, but also to classify them, according to a form previously agreed upon, and common to all, in order that the results from the different schools may be combined together by a no more difficult process than that of simple addition.

I will now submit for consideration, suggestion, and discussion, a plan as to the specific inquiries to be made and the form in which the returns should be sent to us.

Height.—The returns I propose we should ask for, relating to height, would be of the following character.

Returns from

School.

TABLE, shewing the number of boys in School of the various degrees of height, classified according to their ages.

HEIGHT (WITHOUT SHOES).		YEARS OF AGE ON THE LAST BIRTHDAY.							
Above.	Under.	Etc.	9	10	11	12	13	14	Etc.
Etc.	Etc.								
5 ft. 1 in.	5 ft. 2 in.								
5 ft. 2 in.	5 ft. 3 in.								
5 ft. 3 in.	5 ft. 4 in.								
Etc.	Etc.								

When we had received returns from a sufficient number of schools, we should sort them into separate groups, and publish the total results of each group. I should deprecate printing the returns of the schools separately, with their names attached, because it would give the appearance of a comparison of the schools, as to which turned out the best developed boys. It is not within our province to do this, and any suspicion that it might be done would foster a tendency to insert doubtful cases in the higher class. What I propose is, to treat the returns, so far as we are concerned, as confidential; to group the schools in natural classes; and to publish aggregate returns in percentages. Thus—schools A, B, C, etc., would be shown to give such and such general results. Of course, the schools could make any other use they pleased of their own statistics.

It will be observed that the figures in the above schedule would not only give us the information we primarily sought, but they would also give us the law of growth in different classes, both in town and in country. This is known to vary exceedingly under different conditions, but exact numerical determinations have yet to be established.

Weight is the second requirement. Its importance in estimating the physique of a nation is even greater than that of height. Taken in conjunction with the latter, it shows in what degree the different classes vary in bulk of frame and general robustness. The returns would refer to the weight of the boy in the dress ordinarily worn in-doors, and they would be classified in exactly the same way as those of height; that is to say, in classes differing each from its predecessor by equal degrees. As the weights furnished with the various forms of large scales commonly in use in England, are adapted to stones of 14 lbs., I should suggest that the above-mentioned degrees be in half stones. Thus—above 6 stones and under 6½ stones; above 6½ stones and under 7 stones, etc.

Thus, there are three subjects of statistical record which I propose on the ground of their being of primary importance.—1. Age, which runs through both the other groups; 2. Height; 3. Weight. It does not seem unreasonable to hope that returns of these might be obtained through the agency of the Anthropological Institute from many large schools of every well-defined grade, condition of residence, and class of society.

It seems to me better not to speak at present of the attractive and numerous problems that might be solved by a wider range of inquiry; because, if we confine the attention of those we ask to few and simple questions, we are far more likely to have them well and thoroughly answered, than if we had issued a more ambitious programme. We shall soon learn the amount

and value of the co-operation we may rely upon, and can arrange our future proceedings accordingly.

DISCUSSION.

MR. SERJEANT COX said he believed that Quetelet, in his recent work, had made an extensive and valuable collection of statistics of the kind suggested by Mr. Galton, which would form a basis for comparison with those proposed to be collected by the institute. Some hints might be taken from his book as to the facts most desirable to be obtained.

SIR DUNCAN GIBB remarked, that, unless the inquiries suggested in Mr. Galton's paper, were extended to the schools throughout the entire country, they would have no reliable value as statistics. To select a few schools only, in particular places, as he proposed, would be useless for the purposes of comparison as relating to the entire youthful scholastic population. There could be no doubt whatever, of the value of the information to be derived in its bearing upon the physical development of the English people generally, and it should not be limited nor restricted in the mode adopted to obtain it, and he, the speaker, did not see that there would be any material difficulty in obtaining it, when the intelligence and co-operation of the masters of the schools was frankly appealed to.

MR. GALTON explained, that it was his desire to obtain statistics from schools of all description, as public schools, middle class schools, and others, down to those of pauper children.

The following paper was read by the author :

EXPLORATIONS amongst ANCIENT BURIAL GROUNDS (*chiefly on the sea-coast valleys*) of PERU. Part I. By THOMAS J. HUTCHINSON, F.R.G.S., F.R.S.L., Her Majesty's Consul at Callao.

MR. PRESIDENT AND GENTLEMEN,—I am almost afraid that the number of skulls which—originally intended for the museum of your Institute—I have been able to remit from Peru during the last and previous year, may lead you to expect a more perfect report upon them than it is in my power to give. In fact, I feel myself obliged to premise by the plea, although it is a purely personal one, that my visits to ancient Peruvian burial grounds were almost invariably made when I had to be absent from my post for the benefit of my health in seeking change of air.

In my rambles amongst the Golgothas of which we have some illustrations here to-night, I only tried to act in the character of a navvy, partly of a craniological navvy (if the term be admissible), to gather plant, clear track, and prepare the earth-

works for laying down the rails. This last has, however, been so well done by your President, Professor Busk, and by my friend, Dr. Barnard Davis, that no further apology of mine is necessary. The chief object of my paper this evening is, therefore, to relate to you the relative positions in which the skulls, with their accompaniments, were obtained by me.

I was not long in Peru without finding out two very strong points of belief amongst its people. The first is that every bit of an old wall, heap of gravel, mound of earth, large or small cluster of ancient ruins of any kind, is called a "Huaca". And the second is the equally persistent faith that every Huaca is a "Huaca de los Incas".

The term Huaca (Quichua), and I believe synonymous with Quilpa (Aymara), means "sacred". The title may therefore be considered as applicable to the burying grounds of Ancon, Pasamayo, and other places, where there is no elevation above the ordinary surroundings, as to those of Pando and Ocharán—the large burial mounds in the valley of Huatica. It is never applied to the first mentioned style of graves, but every piece of pottery ware therefrom goes by the generic title of "Huaca". Yet in those as much pains seem to be taken, as in the more ostentatious ones, to bury the dead with perfect reverence. The bodies being placed in what may be known as the squatting position—*i.e.*, of thighs flexed on pelvis and legs drawn up perpendicular with thighs. The faces covered over with cotton flock—sometimes with llama wool—the whole body rolled round with cloth, over which is then enshrouded a mat, and a network cording outside. Nuts that may have been talismans, nets for fishing, needles for weaving, heads of Indian corn, agricultural implements (chiefly copper), buttons, sewing-needles, tweezers, and so forth, are included in the rolling. With the men I generally found slings; and with the women almost invariably needles and buttons, frequently some woollen thread and a distaff. Large quantities of crockery ware are put in with many bodies, with others less, and with some none at all. The custom mentioned by various writers of burying the gold and silver first, then the crockery ware, and over that the body, I have not found of general adoption; but I have observed more than once the pottery ware above the bodies.

The burial mounds in the sea-coast valleys of Peru are not always of the same shape; they are as often oblong as irregular, and as frequently of sugar-loaf formation as of the two first mentioned. But although I have examined a considerable number, I have seen none with "galleries running at right angles with each other", as Prescott describes them.* When of

* "History of Conquest of Peru," page 37.

the elongated form, I have generally found a curve in the centre or at either end. At Pacha-Cámac, as well as at Pando, between Callao and Lima, the model of the general mass is crescentic or semi-lunar.

My voyage to Peru having been effected through the straits of Magellan, I had, of course, to make tracks from south to north. The first place in Peruvian territory at which we touched was Arica. Our short stay here did not permit me to make any exploration, but I was told that one incident of the earthquake of August 1868, three years previous, and of which the town still shewed palpable signs, was the heaving up in some places not far from the city of a number of bodies, which were in the squatting position that I have already described. They were covered, as usual, with cloth. Our Vice-Consul at Callao, Mr. Bracey R. Wilson, who had resided many years at Arica, subsequently shewed me bits of cloth, fragments of net, heads of Indian corn, wooden knitting needles for making nets, parcels of amber-looking globules that are known to be eyes of cuttle-fish, and all of the accessories of burial that had been exhumed with bodies here, similar to those that were subsequently turned out a thousand miles further north. The eyes of the fish mentioned I have not seen elsewhere than at Arica, except at Pacha-Cámac, where they are put into the wooden effigies of the face; and these two facts seem to me symbolical of fish-worship. On the small island in front of Arica, ruins still exist, indicating the presence of probably a Pagan idol-house (the term temple applied to such a thing jars on my ear). At all events, many bodies have been found here; and they are constantly being exhumed through the search for treasure all through the Arica country to Tacna.*

From Arica, passing up the coast by Ilo (Eelo), Mollendo, and Islay, we come to the Chincha Islands and Pisco. Of the three first mentioned places I visited only one, that is Mollendo; and I was at the time in such a state of bad health, being on my way to Arequipa, that I had no energy for anything. Up the line of railway hence, and not far from the track, though more than three quarters of the distance from Mollendo to Arequipa, I am told there are rock engravings, described to me by Mr. Ewing as similar in characters to those I afterwards saw on the Pacasmayo line of railway at the Yonan pass, over the Jeje-tepeque river.

The Chincha Islands may not be excluded from the category of burial grounds. For although bodies have not (to my knowledge) been found there, we have had excavated from a depth of

* Mr. Bollaert in his "*Antiquities of Peru*," gives an interesting account of the bodies in a sitting position, found when excavating the Morso or headland of Arica, p. 151.

sixty feet in the guano regalia of the old kings, stone and wooden idols, as well as, now and then, some pieces of gold, which I have been told the Chinese labourers looted amongst themselves. It is a difficult matter to guess at the age of these things.

In the neighbourhood of Pisco are large mounds, some three or four, but between this and the interior town of Ica (or Eca as Senor Larabure y Unanue of Lima spells it), a distance of forty-eight miles, I saw none. From Pisco, coastwise to Cerro Azul, through Tambo de Mora, Chincha Alta, and the Canēte valleys, the country is well marked with ruins. I paid a visit to Ica by rail, and at the hacienda of Senor Don Enrique Martinez hired two men to dig for a few hours in one of those gentle slopes, which a stranger would never recognise as a burial ground. But all of these are known to the natives. We found in one grave several small saucer-like pieces of very ordinary pottery; with them some bones of children and rags of cloth, which crumbled into ashes as soon as they came in contact with the external atmosphere. In another place, and at a depth of about four feet from where the hard digging begun, where a foot or eighteen inches of soft sand had to be shoveled off, the diggers came to three diminutive crocks or urns that were broken by the spade before we perceived they contained bones and cloth. This made us more cautious with a large urn, which after nearly half an hour's delicate manipulation was exhumed, and found to contain the body of a full-grown man or woman disarticulated, the skull being placed uppermost, and part of the ashes in the urn being as of burned cloth. The urn was not more than two feet high, although with mouth large enough to admit a skull. In sending it home to Dr. Barnard Davis I unfortunately packed it with sawdust in a large case together with other pottery; and coming as it did by one of the Pacific steamers to Liverpool, it was smashed into pieces before reaching its destination. My chief interest in that urn arises from the facts, that when I was in the province of Santiago del Estero, in the Argentine Republic, in the year 1862,* on an exploring expedition in search of wild cotton (on which I was sent by Earl Russell), I saw an exactly similar one at the Bracho, in possession of General Don Antonino Taboada. This latter had been dug up in the last-named place with the bones of a man in it. Now the residents of the Bracho, which is one of the Taboada forts on the right bank of the Salado river, and, it may be seen, not only to the east of the Andes, but with a large portion of intervening Argentine territory to separate them from these lofty

* Vide author's "Buenos Ayres and Argentine Gleanings." Stanford, London, 1863, p. 175.

barriers, did not, at the time I was there, exceed three hundred in number; of whom only a few could speak a word of Spanish, their language being the Quichua, the chief dialect, it may be needless to add, of the ancient Peruvians. It is pretty certain, too, that at the present day those who speak Quichua, in Peru, and those who talk it on the bank of the Salado, know nothing of the existence of each other, although the burial ceremonies of their ancestors have been the same. In fact, of Quichua being spoken to-day in Peru we have no evidence—at least along the sea-coast valleys. At Ica, where we are now, is reported the first invasion of the Incas, coming through Nanasca,* and going on to the Pisco valley.

From one of the burial mounds (Huacas) at Ica was taken out a few years ago a work of art made of silver, and of which I have here a sketch. It was lent to me for the purpose from the magnificent private collection of Peruvian Archæology in possession of Senor Don Miceno Espantosa at Lima. In placing this side by side with a work of similar model that was given to me by Mr. Blackwood of Trujillo, and taken out of a burial mound at Chanchan, about five to six hundred miles further north, it may be presumed that the ancient Peruvians were as voluntarily persistent in their arts as they were impassively in the types of their skulls, according to the examinations made by Professor Busk.

This valley of Pisco I believe to be part of the ancient valleys of Chinchas; of which Garcilasso de la Vega tells us, the natives at the time of the Inca invasion confessed they were not the original inhabitants. I sometimes find myself speculating as to whether the burial mounds here, with the large fortress of Canchari, the palace of Chuqui Manca, Hervæ, and other ruins in the valleys of Huarco and Lunahuanac, are not relics of the people who lived there before the Yuncas. And one can scarcely wonder, when looking at these matters dug up, at what Mr. Baldwin recently observed of the aboriginal South American people being the oldest on these continents.

Through the Cañete valley—so styled from its extensive sugar-cane establishments—I rode a good deal amongst its ruins; for I stopped a week here at one of the haciendas of Mr. Henry Smayne of Lima. The southern side of the hill, called the Cerro del Oro—it is believed the Spaniards had good reason to give it this name on account of the large amount of gold they found there—is literally white with skulls and bones; and we see evidences of excavations everywhere. One lot of the skulls sent home by me last year was exhumed at this place. In one of the burial mounds of this valley was found, some few

* Vide "*Commentarios Reales de Garcilasso Inca de la Vega*," lib. vi, chap. xvii, p. 191.

years back, a gypsum or *terra cotta* mask, exactly similar in shape to that of which there is a drawing, published in the report of the Smithsonian Institute as having been discovered in making excavations for the St. Lawrence Canal, during Mr. Squier's explorations in the State of New York. Out of a burial ground in Cañete valley was likewise disinterred a Bosina or shell horn, with excellent art work of leather plaiting, almost as fine as lace, to hold it up by. It had small bunches of human hair on the end, with a couple of rings of ivory. This was used amongst the ancient Indians to announce the approach to the gates of a town of any individual of consequence. Some of the pottery were taken from burial mounds here, as well as the wooden idols, shew the enlarged ear-lobes, which were the subject of a paper before your society, during the last year, by Mr. Harrison.

By the map it may be observed that, in a geographical sequence, the next place I have to notice is the far-famed Pacha-Cámac. Here on the highest plateau is the so-called Temple of the Sun; and at a height of at least three to four hundred feet from the base of an immense mound, on the top of which the building is erected, I dug out three skulls of as true an Indian type as any found elsewhere. All of this, including the mound on which the edifice is constructed, appears the work of human hands. On the second plateau from the top, it may be rather designated a ledge or terrace, I noted a gable end wall, blackened over with soot—suggesting sacrificial fires; and round the corner from this, facing the north, were two niches in the wall, each two feet square and about a foot deep, that I inferred were intended for containing idols. The size of the structure at Pacha-Cámac, whatever it may have been, was something colossal. Of this, a faint idea may be entertained by the fact that the topmost plateau, on which we walked, was tracked by Mr. J. B. Steer, a distinguished young American naturalist who was with us, and calculated to be a superficies of ten acres. Twelve feet below the summit he tracked a terrace of two hundred and forty-eight paces (or so many yards) in length. But the corresponding parallel to this was only one hundred and fifty yards long, so broken, wrecked, and ruinous were all the remains of the building.

Portion of the walls of this enormous structure is made of adobe (sun-dried bricks) to the thickness of about half a yard on the outside, and the inside of about the same size is built of stone. In another part, the stone formation is outside and the adobe within. Where the former wall is of stone, it is of a blood-red colour; a very light thin paint it is, as all my endeavours to scrape some off only brought the slight

plaster, which appeared to lose its colour the moment it was detached. On the north side are five terraces at the heights of ten or twelve feet above one another; and on the west, we find a number of alcoves or lofty niches, designed on this sketch which I have here. The whole structure of stone is built on a mound of earth; but the latter is as high as the top of the walls, an immense pyramid, evidently of artificial formation. If, therefore, the building on the top be considered the temple of the sun, it was constructed on the summit of a huge burial mound or huaca. And if it were a place for Incã worship, who filled it up with clay, as it is now, from base to summit? Certainly not the sun-worshippers themselves, none of whom appear to have been here when Pizarro came. And equally certain the Spanish conquerors did not do it, as they set about exploring for gold, which implies excavating instead of filling in.

Examining these ruins, I find three different styles of graves, *i.e.*, different as regards their architecture. Those nearest to the top were lined in stone and plastered with clay; those on the centre plateau and facing the north were constructed with sun-dried bricks; and those at the base were in the plain earth. We could not do much amongst the first, our time being limited; but we saw the fashion of those graves that had previously been rifled. Our six to eight hours digging by Mr. Steer, Mr. George Wilson of Callao, and half a dozen Chinamen lent by Senor Don Vicente Silva of the San Pedro hacienda close by, brought out several bodies rolled up in cloth, and tied over with rope; together with accessories of wooden effigies of human faces, bundles of coca leaf on the head, large lobed ear on a water jar, flute of sheepshank, and pipe of deer's horn. The coca was bound in a tight parcel on the top of the head, in more than one case over-topped by the wooden effigy. Likewise we collected what appear to be small aprons, such as Garcilasso de la Vega tells us were worn only by married ladies, tiny bags of red ochre, like cinnabar. Slings were obtained here also, as well as not a few skulls having indubitable signs of the action of sling-stones on them; skulls with the sutures in the frontal bones, the same as I had previously picked up at Pasamayo, about thirty miles north of Lima.

Through the town, over which I rode with Lord Cochrane, who was of our party, skulls were scattered about inside the walls of what might have been houses in old times. And although Mr. John Schumaker of Valparaiso, another of my fellow explorers, took excellent sketches of the most interesting points, I left Pacha-Cámac, without being able to realise that there ever was a temple of the sun, or a house of the virgins of the Inca religion there. I could not avoid feeling myself of accord with Mr. George Smith, when writing of the ruins

of Babylon and Boruppa in one of his letters to the *Daily Telegraph*:—"I must confess myself unable to make out the positions of the various buildings, mentioned, by ancient authors. In modern times speculation has spent its strength in determining the sites; but now I have seen the ruins themselves, I am convinced that some and perhaps the most of these speculations are wide of the mark. Nothing can be said upon these points till the ground is properly excavated." These experiences of Mr. Smith are perfectly applicable to all the Peruvian ruins that I have seen. It is not speculation here that we have to combat with so much as the dogmatic assertions that anything worth taking notice of in Peru was done by the Incas. For nearly every visitor goes to Pacha-Cámac with the belief that he is to see the ruins of a temple of the sun; instead of which he has to view a conglomerate mass of ruined walls filled up with clay, and nearly as great in extent as the largest of the pyramids in Egypt. Although not believing it to be a temple of the sun, I have a faith that it abounds in craniological and anthropological wealth well worthy of the trouble and expense of excavation.

Journeying onwards not more than eighteen to twenty miles north of Pacha-Cámac, and in an angle formed by the Pacific Ocean as a base, with Chorrillos, Lima, and Calláo, constituting the angular points, we find the valley of Huatica, the site of the ancient temple of the God Rimac, who was the speaking Deity or the Delphic Oracle at the time of Pacha-Cámac, being worshipped as the creator of all things (as the title represents). In this valley of Huatica, which actually separates the city of Lima from the Pacific Ocean, with a distance of not more than five to six miles between, we find still dozens of ruins, believed to be of temples, idol houses, castles, fortresses, burial mounds, walls, and towns. I have been several times amongst them, but I shall bring only three of these under your notice. They are the chief Huacas or burial mounds. 1. The Huaca of Pando; 2. The Huaca of Pan de Azucar (sugar loaf), its Indian name not known; 3. The Huaca of Ocharán, commonly called Juliana, and recognised by a small wooden house* on the top of it, not far from Mira Flores on the railway track from Lima to Chorrillos.

The Huacas of Pando, on the chaera or farm of Senor Eugenio Osma of Lima, are passed every hour in the day by trains between that city and Calláo. There are three large ones, with a junction of several smaller mounds that seem to have been put up in a hurry; but all of a continuous structure, and having

* This wooden house was erected to shelter the man placed here to watch the grape vines planted about its base.

a crescentic form facing the south. The centre one was tracked and measured for me by Mr. Steer. It has a height of one hundred and eight to one hundred and ten feet. At the western side is a square plateau about twenty-two to twenty-four feet high, which measured forty-eight yards in each of two separate elevations, one six feet above the other; and these measurements being the same from north to south, as from east to west; in fact a square of ninety-six yards. Then mounting to the top he tracked (or stepped it) from two hundred and seventy-eight to two hundred and eighty yards long, and including the part where the plateau already spoken of exists, about one hundred and ninety to one hundred and ninety-two yards in breadth; that is, ninety-six at the summit and ninety-six of the plateau below.

On making these calculations, Mr. Steer directed my attention to the remarkable coincidence of these measurements approximating to multiples of twelve. It was not an easy matter, we found, in such disintegration of antique earth-building, where adobes and clay form a medley, to make a square measurement at all. These, however, were approached as close as possible to the edges, although in nearly all the termini they were broken away.

From the highest plateau, and stepping lengthways, there are eight gradations of declivity, each from one to two yards lower than its neighbour. They gave measurements.

1st plateau.....	97 yards in length.
2nd " 	25 " "
3rd " 	24 " "
4th " 	12 " "
5th " 	23 " "
6th " 	25 " "
7th " 	35 " "
8th " 	37 " "

278 yards whole length or twenty-three multiples of twelve, with two yards over.

In the transverse measurement, besides the ninety-six yards on summit, corresponding with ninety-six at the base already mentioned, we found three different altitudes crossways; the two lowest being at the sides, and the highest in the centre. The first on the south side, and lower down by about two or three yards than the middle, measured sixteen to eighteen yards across; the second, fifty-eight to sixty yards; and the third, twenty-one to twenty-two, an united measurement of the twelve multiple again represented by ninety-six.

The line of this mound in its length trends down from west (highest point) to east (lowest). Another of the lot is from north to south. They are of truncated pyramidal form; and Mr. Steer, estimating it at an angle of forty-five degrees, as well as calculating the base of the largest to be one hundred feet broader than the summit, computed the contents of this single mound to be 14,641,820 cubic feet of material.

Admitting this estimate to be approximately correct, my admiration of the work will not be wondered at, when going to a part where partial excavation had been made, I took from thence two adobes or sun-dried bricks, one of which Mr. Steer brought with him, and the other is with my collections, on its way to England. Each measured six inches long, four inches wide, and two and a half inches thick. More wonderful still it is that many of these adobes, I believe the one that I have among the number, bear on them the marks of fingers; thus proving that they were the work of human hands.

In many points of these mounds we see skulls, thigh, arm, and rib bones cropping up; and a partial excavation here shewed us the same style of burial as is observed elsewhere. Between the Huacas of Pando and the next burial mound, that of the Pan de Azucar on the chacra or farm of Senor Paz Soldan of Lima,* the country is full of ruins. Chiefest amongst these are the remains of the old fortresses or castles of Arambolu (called now Huaca de la Campaña on account of some farcical story about a bell which the Devil took possession of there) and Huatillee (which is entitled San Miguel). The first of these I believe, from a little volume I found in Lima, to have been commanded by the eldest son of Cuys-Mancu, the last king of the Yuncas, whose name was Huachikee.

The ruins of the old city of Huatica are passed by in this direction. So likewise are those of the temple of the god Rimac, with its inclosure of forty-nine acres in superficie, shut in by double walls, of which there are still remains to the height of fifteen feet. But as my business is amongst the burial grounds, we pass on to Pan de Azucar Huaca, which is about a mile interior to the Mira Flores station on the Lima and Chorillos railway. Previous to my visit, indeed I believe a few years ago, this place had been partially explored by Senor Don Antonio Raimondi,† one of the most eminent scientists in Peru. When speaking to him one day of my desire to examine this amongst other places, he told me that his explorations of the Pan de Azucar resulted in finding only articles of a very common kind, as fisherman's nets and very coarse pottery; that the

* The Chacra of Conde San Isidoro.

† Professor of Natural History at the Facultad de Medicina in Lima.

corpses in this mound were all buried with a layer of clay over a layer of bodies; and that he believed the greater portion of the Huatica valley interments in mounds were similar. I ascertained subsequently that, as far as regarded Pan de Azucar, this was nearly correct, but not so in the Huacas of Pando and Ocharán. Mr. Steer and Mr. George Wilson again accompanied me with pick-axe and spade. Our four to five hours digging resulted in finding this to be a mass of bodies, with pieces of cloth, slings, nets, and pottery ware that did not seem to be so very ordinary, as I have a specimen of it here. We dug out very rude misshaped masses of adobe, forming divisions between the burial places; Mr. Steer calculated it to be sixty feet high at the central point, on which a cross was placed. The broadest measurement at the base was from 82 to 83 yards, and the length 130 to 131 yards, again approaching the duodecimal multiple. Estimating its average height, as it was of sloping form, at 30 feet, he calculated it as 3,736,800 cubic feet; and this is all a mass of human bodies, with their funeral accessories kept *in situ* by clay-mortar or clay-plaster. Here I found a greater quantity, than elsewhere, of slings, and amongst other things a bit of braided hair.

Half a mile farther on, and proceeding towards the Mira Flores railway station, we come to the immense Huaca of Juliana, the ancient name of which I learned from an old man there is Ocharán. I got a sketch of this taken at the distance of a mile; but as the little house on the top seemed like a fly on the back of an elephant. I asked the artist, Señor Zabala, to leave it out. The trending of this in its length is from south to north; it presents less of the curvature or crescentic shape than is represented in the mounds of Pacha-Cámac and Pando. To its eastern side, but not connected with the main structure, are three large squares of rubble stones, about ten to twelve feet above the ordinary road height. These (the squares) are perfectly quadrilateral and duodecimal, measuring from 96 to 98 yards each way. After tracking them, Mr. Steer mounted to the top, which he had previously computed to be 95 feet on the highest point. There are but six declivities or terraces here; although they are much larger than those of Pando, as shewn by the following:—

1st plateau on summit...	90 yards long by 52 wide.
2nd " " ...	130 " " 60 "
3rd " " ...	38 " " 52 "
4th " " ...	45 " " 54 "
5th " " ...	40 " " 50 "
6th " " ...	85 " " 86 "

428 yards multiplied by
3

give 1284 feet, another multiple of 12 in total measurement.

Although many of the minor measurements do not approximate to twelve as much as they do at Pando, this may be accounted for by the fact of its having been subjected to a more palpable disintegration of its architecture. For in the year 1854 the artillery of General Echenique was stationed on this Huaca, previous to a fight with the troops of General Castillos.

Like the building at Pando, it is chiefly composed of adobes, one of which I sent home, but it is still *en route*. The most wonderful thing at Ocharán is what remains of a double wall by which it was inclosed, and which Mr. Steer tracked as much as he could. This was found to extend 816 yards from north to south, and 700 yards from west to east, shewing an inclosure of 571,200 square yards or 117 acres. The ends of the walls at either of these lengthways are not well defined, so that they may have extended further.

May I not ask here what are the great squares mentioned by Mr. Markham at the old Chimoo town of Chan-Chan—"squares of 276 yards one way and 160 the other"—when compared to this? Along the whole course of the Huatica valley, from Callao to Chorillos, a distance in a straight line of ten miles, and round by Lima about sixteen, there is no natural elevation that could be made available as a sub-structure for these colossal burial mounds. I have examined the entire country and find nothing of the kind. It is perfectly flat, save in the gradual rise of incline from Callao to Lima. Therefore it calls up not only wonder but admiration of the labour required to collect the earth; of the number of hands needed to fashion the bricks; of the time spent in constructing the great works. And I confess myself, not without a deep reverence for the pious and devoted spirit—Pagan though it was—evinced in the care and respect shewn to their dead parents, wives, husbands, sisters, brothers, fathers, and mothers in the common grave, where "their wicked ceased from troubling and their weary were at rest."

DISCUSSION.

Mr. J. RANDOLPH CLAY said : During my long residence in Lima, I was greatly interested in the study of Peruvian Antiquities, and made a valuable collection of pottery and images, from the huacos, or mounds, in different parts of the country. Several large ones are situated in the valley of Lima; the most interesting of which, are the Huaco de Pando, near the road from Lima to Callao, and another,

between Chorrillos and the sugar-hacienda of Villa. The valley of Lima was a penal settlement before and during the dynasty of the Incas ; and the curiosities found in the huacos, near the city, and at Ancon, are coarse and show very primitive knowledge of pottery. The ancient Peruvians buried their dead in a sitting posture, with the legs drawn up, and the arms across the chest, and bound up in cotton cloth. Those buried in huacos, were probably a better class of people, as there are other cemeteries where the bodies were interred in the sand, without any memorial to mark the spot. The dead were not embalmed after the manner of the Egyptians ; the mummies, however, are found in a remarkable state of preservation, many with the hair unchanged, through the dryness of the atmosphere and the saltpetre in the ground.

An exploration of the burial-grounds in the sea-coast valleys of Peru, would give but a faint idea of the interesting vases, pottery, images in gold and silver and filigree, found in the huacos in the environs of Cuzco, Cajamarca, Chachapoyas, Trujillo, etc. Many of the vases are scarcely inferior to the Etruscan, and there is an ancient porphyry one, which will compare, in sculpture, with any of the kind in the museums of Europe. The golden stags, sheaves of corn and plants, found by the Spaniards in the Inca's garden at Cuzco, are historical ; and there are probably others of the same description, in the caves and huacos in the department of Cuzco and elsewhere, known only to Indians who will not reveal them. The Peruvians often hid such treasures in the ground (*entieros*), and several have been discovered since the Spanish Conquest. In 1576, an Indian showed one near Trujillo, called the "*Peje chico*" (*little fish*), to a white "*Compádre*" (godfather to his child), which contained a mass of gold, worth upwards of a million of dollars. In 1804, an Indian compádre shewed Senor Villanueva, near Cajamarca, a roll of gold, buried at a depth of four or five feet, under a large flat stone, which contained a number of tiny jugs of filigree gold, and twelve filigree gold butterflies so exquisitely made, that at a ball given by Villanueva, they were blown up, and floated in the air over the heads of the guests.

There is in my collection of Peruvian Antiquities, an oval, silver frame with a wreath of roses of the most perfect workmanship and beautiful design ; also specimens of pottery which show the gradual progress made by the Peruvians in ceramic art. Some are probably of a date many centuries before the Incas ; others, of a later period, as, for instance, a tortoise so accurately modelled, that, at a short distance, its marked resemblance to the natural tortoise deceives every one. I have several quipus, or string with knots ; so ingeniously arranged that despatches and messages were sent with them from Cuzco, by Indian runners, stationed at relays, throughout the empire. Fish, for the Inca's table, were carried in the same way from the sea to Cuzco. Among my silver and gold images, there is one with double arms and legs representing, apparently, a Deity of plenty, and a fine statuette, in silver, of a woman, drawn up many years ago, in a fisherman's net, from the bottom of Lake Titicacá : and an eques-

trian statuette in gold (the horse and man in one piece), supposed to have been made soon after Pizarro entered Peru. I have some interesting curiosities from a huaco near Pativilca. One, is a dagger, like those used by some of the South-sea Islanders, with a carved wooden hilt and guard and blade armed, on both sides, with a row of shark's teeth; and a vase, on which are figured birds resembling the Egyptian Ibis; a vase, from a huaco, near Cuzco, has a cross on it like the St. Andrew's. With some of the mummies were found dark red ears of maize, distaffs, with cotton thread upon them, rolls of cotton thread and variegated woven bands, the colours of which are almost as bright as new ones.

The ruins of canals, roads and aqueducts in Peru, are of great extent and interest, and those of the aqueduct, through which water was conveyed across the Andes at an elevation of 8,000 feet, can still be traced from near Lima, and prove that the engineers of the Incas possessed good professional knowledge. The remains of the temple of Pachecamac* near Lurin, those of Cajamarquilla three or four leagues from Lima, and the ruins of the city of the Grand Chimoo, near Huanchaco, extending for six or seven miles along the coast, were probably inhabited centuries before the Spanish Conquest. Judging from the difference in the countenances and statures of the coast-Indians ("*Cholos*"), those of the Cordilleras ("*cerranos*"), and those of Puno, it is possible that the present Indian population of Peru are the descendants of several homogeneous races. I am confirmed in this opinion, by information given me by Don Francisco Odeaga, a gentleman residing near Lambayeque, relating to the inhabitants of the village of "*Eten*," situated on the coast, in Lat. 6° 57' south; and long. 82° 14' 20" west. They are fishermen whose manners, customs and language are peculiar to them. They did not intermarry with the people of the surrounding country, had little intercourse with them, and permitted strangers to remain only twenty-four hours in their village. Señor Odeaga, at my request, obtained a short vocabulary of their language, which is probably like Chinese, as the coolies imported into Peru could converse with them without difficulty! The words in the vocabulary were translated into Spanish, to which I added an English translation, and gave it to the Ethnological Society of New York; under promise that it should be published in their transactions.

SEÑOR GONZALEZ de la ROSA: Mon petit discours devant la société ayant été entièrement improvisé, je vais, puisque on me l'exige, présenter ici un résumé des quelques idées que je peux me rappeler. Les voici:

Je reconnais l'importance des observations de Mr. Hutchinson et je l'en remercie au nom de mon pays et de la science; mais, sans vouloir aucunement critiquer ses vues, je veux exposer quelques unes à moi au rapport de l'archéologie et l'ethnographie du Pérou.

A mon avis, et mettant à présent de côté les caractères physiques, les monuments sont de la plus haute importance pour l'étude des races

* "*He who gives light to the universe.*"

primitives du Pérou. L'architecture, la poterie, les costumes et ustensiles, non moins que la religion, les traditions et le langage, nous fournissent les arguments plus concluants pour la solution du problème ethnologique. Dans ce but, il faut ne plus se borner à faire des descriptions de simple touriste ; nous en avons assez, mais nous n'avons que bien peu d'études consciencieuses dans le but d'éclairer la grande question des origines. Ce qu'il nous faut, ce sont des études profondes et comparées sur ces majestueuses traces que nous ont laissées les races indigènes, dont la plus part sont complètement disparues. Les monuments du Pérou ont besoin d'un Michel Ange qui leur dise :—*Parla ! parlez !* racontez nous les traditions, les migrations, les croyances, la vie publique et privée du peuple qui vous a construits. Si nous avions eu de ces *archéologues philosophes*, depuis longtemps aurait disparu le *préjugé qui attribue tout aux Incas*, et on ne douterait plus de la diversité des races, ou au moins, des migrations au Pérou. Il faut, donc, que des travaux sérieux d'archéologie et d'ethnographie parviennent à déraciner *l'Incomanie*, c'est-à-dire, la croyance routinière qui suppose que, le Pérou a été *exclusivement le pays des Incas*, et qu'en dehors d'eux on n'y trouve rien : préjugé pitoyable, comme le serait celui de croire que parce que Berlin est aujourd'hui la capitale de l'Empire allemand il l'a été toujours, et que, par conséquent, il n'y a jamais eu en Allemagne d'autre race que la prussienne. Eh bien, à l'arrivée des espagnols, le *Cuzco* et ses Incas étaient au Pérou ce que Berlin et son roi sont aujourd'hui en Allemagne : "Les Incas ont été, sous tous les rapports, les Prussiens du Pérou."

Quelque remarquable que soit la civilisation des Incas, la vérité et la justice exigent de nous occuper aussi des autres, qui les ont précédés ou ont coexisté avec eux. MM. Hutchinson et Clay en ayant parlé, je citerai seulement l'exemple de la culture *originale* des *Chimú*, dont la capitale était près de Trujillo. Une des preuves que nous avons pour démontrer que cette race est différente de celle des Incas, et d'autres du Pérou, leur langage nous la fournit.

Cette langue n'est plus parlée qu'à Eten et par quelques Indiens des environs, et est tellement ignorée, même par les classes éclairées du Pérou, que le *Nacional* de Lima, de Paz-Soldan, Wiener et bien d'autres, ont pris au sérieux le suivant canard : "les coolies Chinois arrivés à Eten se sont entendus avec les Indiens, en leur parlant le *dialect de Canton*, donc, les deux langues sont sœurs et les Indiens de la côte du Pérou sont originaires de la Chine." Là-dessus je peux déclarer : qu'ayant étudié sérieusement cette langue, jusqu'au point d'en avoir rédigé une grammaire et un vocabulaire, et les ayant comparés avec les meilleures lexicologies Chinoises, spécialement avec le dialecte de Canton, j'en ai conclu qu'il n'y avait pas une telle ressemblance et qu'il ne s'agissait que d'un gros canard. Cela n'empêche pas que la langue du Chimú ressemble plutôt, dans son *mécanisme*, au Chinois qu'au Quichua et Aymará.

En résumé, et c'est sur quoi j'ai voulu appeler l'attention de l'Institut et des savants consacrés à l'ethnologie Américaine :—1^o. Nous ne devons plus nous borner aux simples descriptions, mais il nous faut

des études profondes et comparatives sur les monuments Péruviens ;—2^o. Le résultat de mes recherches la-dessus, est : que la race Inca n'a point été la *seule* ni la *primitive* source de culture au Pérou, mais qu'au contraire il y a eu, avant et durant sa domination, d'autres centres de civilisation ;—3^o. La diversité des langues étant *une* des preuves les plus concluantes en faveur de la diversité de races, nous en avons un remarquable exemple dans la langue de la côte, parlée par les sujets du grand Chimu ;—4^o. La langue et la civilisation Chimus présentent des caractères d'antiquité et d'originalité tels, qu'ils méritent d'être étudiés avec autant d'intérêt que celles des Incas.

After a few words from the President, the author briefly replied.

Dr. SIMMS, of New York, exhibited and described the flattened skull of an adult American Indian, from Mameluke Island, Columbia River. He said :

The flat-heads of North America occupy a considerable tract of land along the Columbia River and Puget Sound, also in the south-eastern portion of Victoria Island, and throughout the intervening country. They are especially numerous in Washington Territory, and the south-western part of British Columbia.

The flat-heads are divided into several sub-tribes or bands, as the Sae-lies, the Chenooks, etc., and they use a jargon in which Spanish and French can be distinctly recognised in combination with the aboriginal Indian.

Their habits are peculiar, and some of them very repulsive to the minds of Europeans ; yet of sufficient interest and value to the anthropologist, to warrant us in offering some brief notices.

The great distinguishing characteristic from which these Indians derive their name, is the flatness of the head, which is artificially produced by a process of the most revolting description. Soon after the birth of a child, its head is compressed by binding it up between two wooden boards, or one board and a bag of sand. The planed surface of the wood is applied at the back to the occipital bone of the infant, while the other board or bag of sand, or stone covered with bark is placed against the frontal bone, just above the visual orbits. Both are bound securely and tightly on the soft head, compressing it anteriorly and posteriorly, and thus producing the required flatness in a rapid, and, to the parents, perfectly satisfactory manner. The anatomist need not be told, that in the cranium of a new-born infant the bones are not only soft but separate, their dentiform margins not being united by a suture as they become after a few months. The frontal bone is formed in two distinct portions, neither joined to each other nor to any other bone in the system. Hence the skull may be easily compressed into any form

that may be desired, and the taste of this particular tribe is for the flatness we have described. The pressure being considerable, shortens the head from front to back, and of course increases its width, until the parietal points where the ossification of that bone commences are pushed outwards and rendered wedge-like, the sharp part being in the upper back portion of the cranium. The head is kept under this pressure for the space of from six to nine months, when it is found sufficiently flattened to satisfy the abnormal fancies of beauty which obtain in this tribe, and it never afterwards loses the shape. While the deforming process is going on, the integument becomes surcharged with blood; and consequently the head when released from the bonds to which the tyranny of fashion consigned it, presents a spectacle truly disgusting and revolting to any one who has learned to love the human form as fashioned by the Creator. Strange to tell, the infant undergoing this apparently cruel process, evinces no sensation of pain or suffering. In fact, the children of American Indians seldom or never cry; probably because the nervous system is inherited in a healthy condition.

As the deforming process we have described does not seem to produce acute pain during its continuance, so neither is there any reason to conclude that it occasions any serious injury to the mental faculties.

On the contrary, these flat-heads exhibit considerable acuteness and general intelligence, not falling in this respect behind those who escape the misfortune, or as it is thought, miss the privilege of being made flat-headed. Of the latter class are the half-breeds, who are held in contempt, and not being favoured with this mark of nobility and beauty, grow up with as well formed heads as any other of the North American Indian tribes. The flatness of head seems to be coveted rather as a distinctive honour than a positive beauty. The preference for it is rather aristocratic than æsthetic. They say that in the olden time all the great chiefs and warriors exhibited this form of cranium, and this is their reason for stamping it on their children. It has been stated that only male infants are thus flattened; but this is erroneous. Male and female are alike subjected to the operation.

These flat-head Indians excel in carving, and turn out some very unique and interesting pieces of workmanship, from stone, wood, horn, and ivory. Of the horns of the rocky mountain sheep they make spoons and soup dishes, equal in utility, if not in beauty, to any of European manufacture. They are expert hunters, and in salmon-fishing they have no superiors. They catch large numbers of these fish, and sell each of them, without regard to size, for an English shilling, or as they say "two bits."

They have learned from settlers on the Pacific coast to call an English sixpence "a bit." Like other North American tribes, these Indians are very superstitious. But the only other peculiarity we shall describe, is their manner of disposing of the dead, which is not by burial under ground as is our usage. Mameluke Island, situated in Columbia River, and about two hundred miles from its mouth, is, and has been for many years, occupied as a place of sepulture. It contains from six to ten acres of land which are used in this wise. The Indians split up wood into boards six feet long, one to two feet broad, and from an inch to an inch and a-half thick. With these boards they form an inclosure, from six to eight feet square, about six feet of course in height, covered in either with similar boards or with bark, the whole wattled together with branches of trees, and supported by wooden shoring.

A corpse is prepared for its last resting place by a rude process of embalming. A species of berry is thrust into the eyes, nose, and mouth. Pieces of snake-skin are tied round the head and also the trunk of the body as a protection from bugs and other insects. Blankets are then wound round the body, and silk handkerchiefs round the head, with beads and wampum. The whole is securely sewed up in buckskin with leather thongs, and carefully laid on the pile of dead bodies that has already been formed in one of the wooden inclosures, on the bare ground. Old residents say, that in former times, the Indians did not scruple to deposit the living wife with the dead husband; the eldest wife, if he had more than one, as sometimes was and still is the case; for the flat-heads are somewhat polygamously inclined. They imagine their heaven or next world to consist of extensive and beautiful hunting grounds, with *Tyhee* or the Great Spirit for a chief; and with this idea they deposit with the body of their departed friend, his blankets, implements of war, and hunting, with whatever other personal effects can conveniently remain near the corpse, supposing that he or she may require them in the Great Spirit's hunting ground. Mameluke Island contains numbers of the burial pens above described, inclosing hundreds of these mummy-like corpses, some of which are in a good state of preservation, the whole form appearing intact; while others have settled into the sand that drifts over this rocky islet.

DISCUSSION.

SIR DUNCAN GIBB said he recognised an old and familiar friend in the flat-headed skull now exhibited, for some seven-and-twenty years ago, he was permitted by his friend Dr. William Rowand, then living at Montreal, but now at Quebec, in Canada, to study and examine

a barrel full of them, which had been brought from the Hudson's Bay Territories, either by the doctor himself, or had been sent him by his father who was a partner in the Hudson's Bay Company. The precise locality whence they were obtained was not mentioned; it was, however, somewhere in the interior, but he would like Dr. Simms to tell him, whether these flat-headed Indians did not extend some distance inland as well as along the line of the Columbian coast and river. Although he had been familiar with these skulls for years, yet he had never heard such a clear and graphic account of the mode of flattening them in the infancy of both sexes as had been given by the author, and he expressed the pleasure he had derived in listening to his description of their mode of sepulture. He agreed fully with the author, that the artificial alteration produced in the shape of the skull, great and remarkable as it was, would not necessarily impair the intellectual powers, as his description of the people clearly enough proved.

The discussion was further sustained by Mr. Luke Burke, Mr. Serjeant Cox, Dr. Frederick Dally, Señor G. de la Rosa, and the President.

The meeting then adjourned.

NOVEMBER 25TH, 1873.

Professor BUSK, F.R.S., *President, in the Chair.*

The minutes of the last meeting were read and confirmed.

The following new members were announced: J. BARCLAY THOMPSON, Esq., B.A., Christ Church, Oxford; WM. GILL RANGER, Esq., M.R.C.S., 4, Finsbury Square; RICHARD BRIDGER, Esq., 5, James Street, Covent Garden.

The following presents were announced, and the thanks of the meeting voted to the respective donors:—

FOR THE LIBRARY.

From the EDITOR.—The Food Journal for November 1873.	8vo.
From the Rev. JAMES GRAVES.—Journal of the Royal Historical and Archæological Association of Ireland. Vol. I, No. 8.	8vo.
From the MANX SOCIETY.—Mona Miscellany.	8vo.
From the DIRECTORS.—Revista de Portugal e Brazil. No. 2, 1873.	8vo.
From the SOCIETY.—Proceedings of the Society of Antiquaries of London. Vol. V, No. 8.	8vo.

- From the SOCIETY.—Archivio per l'Antropologia e la Etnologia. Vol. III, fasc. 3 and 4. 8vo.
- From the AUTHOR.—Tableau des Races de l'Inde Centrale. By M. Louis Rousselet. 8vo.
- From the SOCIETY.—Sitzungsberichte der physikalisch-medizinischen Societät zu Erlangen, 5 heft. 1872-3. 8vo.
- From the EDITOR.—La Revue Scientifique, Nos. 21, 22, and 23 1873. 4to.
- From the EDITOR.—Zeitschrift für Ethnologie; fünfter Jahrgang, 1873. 8vo.
- From the Rev. M. P. CLIFFORD, D.D.—Terra Incognita; or, the Convents of the United Kingdom. By John Nicholas Murphy. 8vo.
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The author read the following report :

REPORT *on the* DEPARTMENT of ANTHROPOLOGY, *at the* BRADFORD MEETING *of the* BRITISH ASSOCIATION *for the* ADVANCEMENT *of* SCIENCE, 1873. By F. W. RUDLER, Secretary of the Department.

FULLY recognised as one of the great Departments of Biological Science, Anthropology has for the last few years taken an undisputed position in the proceedings of the British Association. At the recent meeting, this position was well maintained and the interest of our science ably supported under one of the distinguished Vice-Presidents of this Institute. Whilst the general Section of Biology was placed under the presidency of Dr. Allman, F.R.S., the special Department of Anthropology, was presided over by Dr. Beddoe, F.R.S.; and it is only fair to state at the beginning of this Report, that the successful issue of the proceedings in our department, was in great measure due to the ability and courtesy with which the duties of the chair were discharged. On the last day of the meeting, when Dr. Beddoe was unavoidably absent, the chair was occupied by Sir Walter Elliot, K.C.S.I., one of the Vice-Presidents of the Section.

Anthropology was further represented at Bradford by the following members of this Institute, many of whom lent their aid, by serving on the committee and by taking an active part in the public discussions; namely:—Mr. H. G. Bohn, F.R.G.S.; Mr. E. W. Brabrook, F.S.A.; Mr. Hyde Clarke; Mr. Moncure Conway; Dr. Barnard Davis, F.R.S.; Mr. W. Boyd Dawkins, M.A., F.R.S.; Mr. John Evans, F.R.S.; Mr. Francis Galton, F.R.S.; Sir Duncan Gibb, Bart., M.D.; Mr. J. Heywood, F.R.S.; Dr. J. Hooker, C.B., F.R.S.; Prof. T. McK. Hughes, M.A.; Dr. Richard King; Mr. Clements Markham, C.B., F.R.S.; Mr. M. Moggridge; Dr. Muirhead; Mr. J. S. Phené, F.S.A.; Mr. W.

Spottiswoode, F.R.S.; Dr. Struthers; Mr. R. H. Tiddeman, M.A.; Mr. E. B. Tylor, F.R.S.; Mr. C. Staniland Wake, and Mr. T. Wright, M.A.

The duties of the secretaryship had been deputed to Mr. J. H. Lamprey and to the Reporter; but it unfortunately happened that Mr. Lamprey was unable to attend the meeting.

All the departments of Section D were accommodated in the rooms of the Church Institute, the large lecture-hall being given up to the Anthropological Department. The meetings of this department were held on the Thursday, Friday, Monday and Tuesday of the Association week.

In opening the proceedings, Dr. Beddoe gained for our science much local interest by taking for the subject of his address—the Anthropology of Yorkshire. It appears that the earliest inhabitants, whose remains are to be distinctly recognised at the present day, may be referred to the Neolithic age. To judge from the evidence of certain tumuli, these neolithic folk were a people of moderate or rather short stature, with long and narrow heads, who buried their dead, with sanguinary rites, beneath barrows of long ovoid form. This type of tumulus, however, is much less common than the round barrow of the succeeding bronze age. But it should be remarked, that according to some local authorities, no distinctive race-characters can be established between the builders of the two kinds of barrow. The round barrows, plentifully distributed over the Yorkshire Wolds and the Cleveland Hills, contain either burnt or unburnt bodies, accompanied in many cases by arrow-heads of flint, in rarer cases with weapons and ornaments of bronze. The bronze-using builders of these round barrows seem to have been a tall and stalwart people, with harsh bony features, and a rather short and broad skull, of considerable capacity. Both types of cranium find their representatives in the present population; that of the long barrow being much rarer, however, than that of the round barrow. Dr. Beddoe is disposed to refer the round type to the Brigantes and Parisii—the two tribes of British Kelts known to have occupied Yorkshire prior to the Norman Conquest.

That Conquest seems to have exerted but little ethnological influence on the population. Without denying that vestiges of Roman blood are yet traceable in certain parts of the country, Dr. Beddoe believes that the intensity of Roman colonisation has been over-rated by certain authorities, and that it was not, from its very nature, likely to leave any permanent impress on the people whom it temporarily affected.

Respecting the succeeding Anglian conquest but little is known. Judging from the skulls found at Lamel Hill, near

York, this form of cranium was not remarkably fine, and was certainly not superior to the ancient British type. But the Anglian is hardly known as distinct from the Scandinavian type which ultimately overlaid it.

Great ethnological importance must, of course, be attached to the Danish Invasion. It is well known that Danes and Norwegians came over in considerable numbers and settled in Yorkshire, where their influence may still be traced in the dialect and especially in the local nomenclature. The distribution of place-names seems to show that the Danish element was irregularly distributed; some parts, such as Cleveland, being remarkably rich in Danish names.

Yorkshire, with certain parts of the adjacent counties, was visited with unexampled severity during the Norman Invasion; and ethnological changes, more or less marked, may have been thus brought about in some parts of the country. Subsequently to the Norman Conquest, no ethnological element of importance has at any time been imported into the locality.

In describing the present inhabitants of Yorkshire, Dr. Beddoe followed Prof. Phillips in recognising three distinct types; (1.) Tall, large-boned people, with long faces, fair or florid complexion, blue or grey eyes, and light-brown or reddish hair. (2.) Robust, oval-faced people, with a somewhat embrowned, florid complexion, brown or grey eyes, and brown or reddish hair. (3.) Shorter and smaller folk, with short round faces, embrowned complexion, and very dark eyes and hair. Prof. Phillips ascribes the first and second types to a Scandinavian, and the third to a Romano-British, or perhaps an Iberian origin. Dr. Beddoe is inclined to regard the first type as Norwegian rather than Anglian; the second as Anglian rather than Norse, and Norse rather than British; whilst the third is of more doubtful origin, and may be made up of many different elements—such as Iberian, Brito-Keltic, Roman, Breton, and French.

A wide range of personal observation, supplemented by information derived from his local correspondents, enabled Dr. Beddoe to offer some comparative observations on the physical anthropology of Yorkshire. It appears that the width of the head is rather greater in this county than in other parts of Britain. The hair is, on the average, lighter, but dull shades prevail. In the rural districts the people are remarkably tall and stalwart, but they are rapidly degenerating in the towns. A sketch of the moral and intellectual characters of the typical Yorkshireman brought the address to a conclusion.

It is, perhaps, to be regretted, that the excellent example set by the chairman, of discussing questions of local interest, was not followed by other contributors. To the end of the

meeting, this address remained the sole communication devoted to local anthropology.

Most anthropologists will remember, that at the Brighton meeting, a committee was appointed for the purpose of preparing and publishing brief forms of instructions for travellers, ethnologists, and other anthropological observers. On behalf of this committee, Colonel Lane Fox, who had acted as secretary, presented a preliminary Report, accompanied by specimens of the work already executed. Soon after the appointment of this committee, two exploring expeditions were despatched from this country to Africa; and at the instance of the Royal Geographical Society, a body of anthropological instructions was drawn up by certain members of the committee, and issued to the officers in command. But as these instructions were prepared under pressure of only a few days' notice, and had reference solely to African exploration, it was considered that they did not fully meet the objects for which the committee had been appointed. Under these circumstances, the responsibility of their publication was undertaken personally by Colonel Lane Fox.

Ignoring then the small volume of African instructions, the real work of the committee has been that of preparing an elaborate system of notes and queries distributed under one hundred heads, and arranged in three groups, relating. (1) to the constitution of man, (2) to culture, and (3) to miscellaneous questions bearing on anthropology. The preparation of these instructions has been undertaken by some of the most eminent authorities on the respective subjects; and most of these contributors have by this time completed their work, much of which is already in type. But at the date of the meeting, the printing had not sufficiently advanced to justify the withdrawal of the sum placed at the disposal of the committee, and the grant was, therefore, allowed to lapse. It must be a matter of congratulation to all, that this committee has been re-appointed, and that a new grant, extending to £50, instead of £25, has been placed at its disposal. It is estimated that this sum will cover all expenses of publication, and it may now be confidently expected that the work will appear at an early date.

Turning from these official communications to the main body of papers, the first on the Bradford list was the contribution of a lady. Miss A. Buckland, of Bath, presented a paper on "The Serpent in connection with Primitive Metallurgy"; but as this communication has been transferred to the Institute, it is almost needless to reproduce the writer's arguments. It may be sufficient then, to say, that Miss Buckland's object was to trace a connection between the worship of the serpent and a knowledge of metals; to show, in fact, that the serpent-worshipping Tura-

nian races of the East were the earliest workers in metals. Not that they were acquainted with the art of smelting metals from their ores, but they seem to have discovered certain metals which occur more or less abundantly in a native state. These serpent-worshippers are also credited with some knowledge of mining and of agriculture, and appear to have been acquainted with precious stones. From an extensive study of legendary and monumental evidence, the authoress is led to believe that such knowledge was derived in some way through the instrumentality of the serpent, which therefore came to be revered as a benefactor of humanity.

In a paper entitled: "A True Cerebral Theory necessary to Anthropology," by Dr. J. Kaines, M.A., it was argued that anthropology must needs remain incomplete as a science, until phrenology shall have acquired positivity. The writer maintained that phrenology, being based on physiology, was the only *de facto* science of mind, and that other so-called sciences of mind, based on theological and metaphysical data, were essentially unscientific. After reviewing the labours of Gall and his followers, Dr. Kaines showed in what manner the phrenological system had been regarded by many eminent thinkers and physiologists, giving especial prominence to the views of Auguste Comte.

More than twenty years' residence as a missionary in the Island of Mangaia, one of the Hervey group, gave considerable value to some notes on the ethnology of these islands, by the Rev. W. Wyatt Gill. A belt of coral-limestone, surrounding the interior of Mangaia, rises gradually at a distance from the beach, and presents a perpendicular escarpment towards the interior. This coral rock is perforated by numerous caverns, which have been used as habitations, refuges, and cemeteries. The author had explored a great number of these limestone caves, and exhibited examples of the human bones which he had procured from the stalagmite. Mr. Gill expressed his belief that the Hervey Islands, and indeed all the eastern Pacific Isles, had been peopled in comparatively recent times, and some generations later than Tahiti and the neighbouring islands. According to the author, the colonisation of the Hervey group may not date back beyond five or six centuries. After the reading of this paper, Mr. Gill exhibited and described a highly interesting collection of stone implements, and other objects of ethnological significance, collected during his residence in Polynesia.

A profusion of admirably-executed diagrams lent a good deal of attraction to Mr. Phéné's paper, on "An Age of Colossi." After calling attention to the inhabitants of what he described as the three great centres of Colossi—the Egyptian, the Malayan,

and the Pre-Mayan or Mexican—the author pointed to certain characters which their works possessed in common. Among the most prominent of these features were the occurrence of the pyramid, the obelisk, the monolith, and the elevated platform, in their architecture; and the delineation of colossal emblems of man, birds, and reptiles. The worship of the sun was also said to be common in these widely-separated centres. The Greeks and Romans were not originators of colossi, but merely elaborated the crude ideas derived from Egypt. In referring to the remains of colossi in Britain, Mr. Phené took occasion to correct the interpretation frequently placed upon Cæsar's description of the way in which the Gauls sacrificed their human victims. From the use of the word *contexta* applied to the large figures in human form, it had been supposed that they were huge wicker images which were filled with victims, and then set a-fire. But Mr. Phené maintained that the figures were merely arenas or spaces marked out in the shape of a man, and fenced round with osiers. The gigantic figure carved in the chalk at Wilmington, in Sussex, is believed to be one of these sacrificial arenas. In consequence of Mr. Phené's exertions, the Wilmington giant is about to be restored; and the Duke of Devonshire, who has kindly consented to this restoration, has aided the work by a liberal donation.

To Mr. E. B. Tylor, F.R.S., the department was indebted for a valuable paper, "On the Relation of Morality to Religion in the Early Phases of Civilisation." Most savages possess some amount of theology and some amount of ethics, but the one may be quite independent of the other. The animistic religion of the lowest races at the present day, as that of the Australian, is said to be destitute of any moral element; and Mr. Tylor inferred, that during the earliest phases of culture in prehistoric times, and perhaps for a long period of history, religion and morals were essentially distinct agents, not derived from the same source, not operating in the same way, not enforced by the same authority. The author sought to show how, in the course of civilisation, a coalescence was brought about between morality and religion; how an ethnical theology came to be evolved from an unethical system. In illustration of his argument, the author traced in detail the history of the connection between religious rites and the institution of marriage. There seems to be little doubt that marriage was originally nothing more than a civil compact, the bride being obtained either peacefully or hostilely, by contract or by capture, but without any of the religious ceremonies which are commonly associated with marriage in more advanced stages of civilisation. On the other hand, the history of medicine exemplifies the way in which religion can be sepa-

rated from an institution with which it has long been connected. In the lowest stages of culture, disease is commonly referred to the influence of evil spirits, and priestly exorcism is consequently the only recognised cure; but as civilisation has advanced, the causes of disease have been rationally studied, and the healing craft has therefore been transferred from the sorcerer to the man of science. These examples tend to show how morality might become associated with religion, although the two agencies may have been originally distinct. The present paper was an original attempt to determine in what manner, and at what period in the history of civilisation, such an amalgamation was effected. This communication was certainly one of the most notable on the Bradford list, and it is to be hoped that its author will transfer it to the Institute.

Some "Remarks on Ethnic Psychology" were presented to the department, by Mr. R. Dunn, F.R.C.S. In a paper which the author read at the Cambridge Meeting, in 1862, he insisted on the importance of carefully studying the cerebral organisation of the typical modifications of man, with the view of elucidating their characteristic psychological differences. Believing that psychical peculiarities are correlated with differences in the organisation of the brain, Mr. Dunn again urged the necessity of such comparative studies, and dwelt at length on the labours of Gratiolet. At the same time he regretted that more had not been done by other observers, in carefully comparing and contrasting the structure of the brain in different races. This paper will probably be submitted to the Institute; but it may be remarked that, in the course of the discussion, Dr. Beddoe did not fail to point out the new direction which such studies are likely to take, through the recent investigations of certain German physiologists, and especially through those of Prof. Ferrier on the localisation of the functions of the brain.

Two philological papers, which we may hope to have an opportunity of hearing in this room during the present Session, were read by Mr. Hyde Clarke. One of these was "On the Comparative Chronology of the Migrations of Man in America in relation to Comparative Philology"; and the other was "On the Prehistoric Names of Weapons." In the former communication the author proposed the basis of a chronology of migrations from the old to the new world in prehistoric times. He concluded that America possessed no indigenous or aboriginal language, grammar, mythology, or culture; but that these were derived from the old world. The earliest epoch of migration proposed by the author was that of the Pygmaean races, having languages allied to the Mincopie of the Andaman Islands.

In discussing the names of weapons, Mr. Hyde Clarke cited,

from the languages of India, West Africa, the Americas and Australia, examples of the biliteral roots, *bk*, *bn*, *kn* and *dm*, applied to arrow and dart, knife, axe or hatchet, spear or lance. Passing to the later triliteral epoch, allusion was made to the fanciful resemblance of weapons to the tongue in the act of darting; examples of this are furnished by the words *Degen* and *Tongue*, *Lancia* and *Lingua*, *Gladius* and *Glotta*.

For several years past the Geological Section has regularly received reports from the Kent's Cavern Committee, which was appointed at the Bath Meeting in 1864, and is still carrying on the systematic exploration of this cave. The results of their work, although submitted year by year to the geologists, have always had great interest to the anthropologists. Hence Mr. Pengelly was warmly welcomed in our department, when he came forward with a paper on the "Flint and Chert Implements found in Kent's Cavern, near Torquay." The main object of this communication was to show that the cave offered evidence of occupation by man at two distinct eras. The sequence of the deposits in this cave, and the character of the remains which they respectively contain, are now well known. The layer of "black mould" in the uppermost part of the floor yielded remains which were comparatively modern: the flint implements were merely flakes and strike-a-lights, and the associated organic remains were all of recent species. Mr. Pengelly suggested that the period represented by this black mould might be appropriately called the *ovine* period, since the remains of sheep are restricted to this deposit. Passing over the subjacent layer of "granular stalagmite," and the local deposit called the "black band," another bed, of mechanical origin, is reached; this is a layer of reddish loam with fragments of limestone, known as the "cave-earth." It has yielded ovoid and tongue-shaped implements of flint and chert, fashioned from flakes which have been produced artificially. These stone implements were associated with certain objects of bone, and with the remains of extinct mammals, among which those of the cave-hyæna were the most characteristic; hence the period of the cave-earth has been termed the *hyenine* period. Separated by a floor of "crystalline stalagmite," comes a yet lower cave-deposit, known as the "breccia." This has yielded a number of rude flint implements formed direct from flint nodules and not from flakes; moreover there were no bone objects in this layer. The mammalian remains from this deposit were exclusively those of the bear; and the breccia is consequently taken to represent an *ursine* period, prior to the advent of the hyæna. The greater rarity and the ruder form of the stone implements of the breccia point to an earlier phase of civilisation than that of the cave-

earth; and as the two deposits are separated by a thick layer of stalagmite, it is inferred that the corresponding periods must have been separated by a wide interval of time. The value of Mr. Pengelly's communication was duly recognised by the committee, who recommended that it should be printed *in extenso* in the Annual Report.

Although this was the only communication on cavern researches made direct to the department, yet it should be mentioned that the caverns in the mountain limestone of Craven received some share of attention. The Victoria Cave, near Settle, which is now being systematically explored by a committee of the British Association, was visited, at the close of the meeting, by a party of members under the guidance of Mr. W. Boyd Dawkins, M.A., F.R.S. A select party had previously visited this cave, at the invitation of Mr. Birkbeck, of Settle. Another of the general excursions was made to Ingleborough Cavern, under the conduct of Prof. T. Mc K. Hughes, M.A., and Mr. R. H. Tiddeman, M.A. In this cavern, the visitors had an opportunity of examining the stalagmitic deposit known as the "jockey cap," on which Mr. Dawkins has recently made some observations respecting the rate of the growth of stalagmite.

Returning to the list of papers, we notice a short communication from Dr. J. Sinclair Holden, descriptive of what he believed to be "a hitherto undescribed Neolithic Implement," illustrated by specimens of the implement in question. It is formed from a flat flint flake by chipping a semi-circular piece out of its margin, the edge of which is bevelled and finely serrated. Specimens have been found by the Earl of Antrim and by the author in several dolmens in Antrim. Dr. Holden believed it to have been used as a saw, and suggested that it might have been of service in sawing notches on a round stick, or in notching arrowshafts to aid in securing the barb. Specimens of the implement will probably be submitted to the Institute at an early date.

A horn and certain bones found in a cutting in a street at Maidenhead were exhibited by Dr. Moffat. They were embedded in flint gravel at a depth of about six feet from the surface. The horn exhibited certain cuts, some of which appear to have been made for the purpose of separating the horn from the skull, and Dr. Moffat suggested that these had been made with a metal tool. Mr. Boyd Dawkins expressed his opinion that the horn belonged to an ox intermediate between the *urus* and *Bos longifrons*.

Some stone implements, collected by Mr. C. B. Brown during the geological survey of British Guiana, were exhibited and described by the reporter.

During last year's session of the Italian Anthropological and Ethnological Society, presided over by Prof. Mantegazza, a paper was brought forward by Prof. Gennarelli, with the view of proving the existence of a race of red men in Northern Africa and Southern Europe in pre-historic times. Mr. C. H. E. Carmichael contributed to the Department an analysis of this paper, and of the discussion which it excited. Gennarelli's theory is based partly on legendary and partly on monumental evidence. In Egyptian hieroglyphics and on Etruscan pottery representations of men are invariably coloured red, whilst those of women are of a lighter shade. As a consequence of the discussion of this subject, a committee composed of some of the most eminent Italian anthropologists, archaeologists, and philologists, has been appointed for the purpose of studying the primitive races of Italy.

It is not long since Mr. Park Harrison, M.A., read before this Institute a paper "on the Artificial Enlargement of the Ear-lobe," in which he traced this custom from the west of India to the Continent of America. Having extended his observations on such coincidences in widely-separated localities, Mr. Harrison brought to Bradford a general paper, in which he dealt with the wide question of "The Passage of Eastern Civilisation across the Pacific." The object of this communication was to show that not only the practice of distending the ear, but a number of other customs, might be traced from the old world, in an almost direct line across the Pacific to the shores of America. The similarity of customs was, in many cases, too striking to be referred merely to accidental coincidences, and the author maintained that it indicated actual intercourse. Mr. Harrison's observations related chiefly to the islands in the eastern half of the Pacific, especially to Easter Island. According to local tradition, a chief reached Easter Island ages ago from Oparo, an island more than two thousand miles to the west. Now Capt. Powell has shown that there is a drift-current flowing eastwards, caused by winds which at certain seasons blow in a direction contrary to that of the trades, and that this current after sweeping round Easter Island is deflected northwards. The author argued that such a current might carry canoes from the west to Easter Island, and that a boat starting from this island might be carried in a north-easterly direction and landed on the coast of Peru, in the neighbourhood of Truxillo. This migration would well accord with certain South American traditions.

Mr. W. Boyd Dawkins, F.R.S., contributed a paper, or rather delivered an address, "on the Northern Range of the Iberians in Europe." After describing the characters of the Iberian, Basque, or Euskarian peoples, he examined their geographical

distribution from the historical point of view. In the Iberic Peninsula, two ethnological elements were recognised—a northern or Iberian, and a southern or Keltic; the fusion between the two being indicated by the term Keltiberi. In France, at the time of its conquest by the Romans, the Iberic element was represented by the Aquitani, who were separated by a broad Keltic band from the allied Ligurians on the borders of the Mediterranean. In Britain, the Iberians were represented by the Silures of Wales, whilst the greater part of the island was occupied by a Keltic population, although the Belgæ had settled in some of the maritime regions. So in Ireland, the dark-haired inhabitants of the south-west were said to be of Iberian descent, whilst most of the island was peopled by Kelts. This distribution of the Iberians in patches scattered through Ireland, Wales, France and Spain—*islands of Iberians, isolated by seas of Kelts*—went to show that at one time the Iberic peoples were probably distributed over the entire area, and had been driven westward by the Kelts. According to Mr. Dawkins, this conclusion was confirmed by a study of the contents of bone-caverns and tumuli; indeed the evidence from this source tended to prove that in the neolithic age the Iberians extended as far north as Oban and as far east as Belgium, and that the caves of the Iberic peninsula were also occupied by similar people. The author then traced the westward route by which the Iberians probably passed from Asia into Europe; and finally touched on the relation of the Iberians to the Etruscans.

Dr. Beddoe, although unavoidably absent when Mr. Dawkins brought this subject forward, contributed to the discussion by transmitting a written note on the Iberian question.

In view of our political relations with the west coast of Africa, Mr. Hyde Clarke read some notes “On the Ashantee and Fantee Languages.” A great variety of languages are concentrated on the coast of Africa, and as they belong chiefly to earlier stocks, they offer evidence of successive migrations into the district. The Ashantee is closely related to the Fantee, and these two languages, with the Dzellana, were classified with the Corean, to the north-west of China, whilst the Chetemacha was assigned as a North American branch.

Mr. Hyde Clarke also took occasion to make some remarks on a valuable Report on “Bushman Researches,” by Dr. Bleek. A copy of this report had been received by the Department, but it was decided that, as the document was in the form of printed matter, it could not be read as an original communication. Nevertheless the value of these materials for anthropological investigations was fully recognised, and was well explained to the meeting by Mr. Hyde Clarke.

In the foregoing retrospect of the proceedings at Bradford, the several communications have been noticed precisely in the order in which they were taken at the meeting. It will be observed that in several cases papers of a like character were not grouped together. This arose not from any oversight, but from sheer inability on the part of the officers to classify the subjects. Although the rules of the Association now require that all papers be sent in before a certain date prior to the meeting, this rule was so far neglected that comparatively few of the papers were in the secretary's hands at the commencement of the meeting. To avoid the recurrence of this inconvenience, the reporter ventures to urge on future contributors the desirableness of strictly adhering to the new rules, and of forwarding their communications as early as possible, in order that arrangements may be made for appropriating each day to a special subject, or to a group of kindred subjects. Such an arrangement must obviously react to the benefit of those who contribute memoirs, since it would tend to draw together an appreciative audience specially interested in the subjects under notice, whilst the discussions would thus become more systematised and less discursive than when they range over a desultory list of papers.

On the motion of Mr. Brabrook, seconded by Mr. Hyde Clarke, a vote of thanks was accorded to Mr. Rudler for his Report, and for his services to Anthropology, as sole Secretary to the Department at the Bradford Meeting.

DR. G. W. LEITNER, Principal of the Government College of Lahore, gave an account of the *SIAM POSH KAFIRS*, a race inhabiting Kafiristan, in the Hindu Kush, and supposed to be a Macedonian Colony.

DR. G. W. Leitner spoke as follows : Before I come to the subject which interests us this evening, I think it necessary to refer to the action which the Society took four years ago in a matter which indirectly bears upon it.

In 1869, it will be remembered several societies, especially the Anthropological, the Ethnological, and Philological, addressed the Secretary of State for India on the subject of prolonging my leave in this country,* with a view of elaborating the material

* The following is the Copy of a Memorial by the Philological Society of London to the Secretary of State for India, sent November, 1869.

MY LORD DUKE,—The Philological Society having been informed that Dr. G. W. Leitner, the Principal of the College at Lahore, is at present on leave in England, and being aware that it is his intention to complete his

that I had collected during a tour in Dardistan and adjoining countries. It is not necessary for me to give you a detailed account of the exceedingly kind and earnest manner in which this was brought to the notice of the Government, which, however, considered that I should return to India; but it is necessary to point out, with a view of showing that the action of societies on such occasions is advisable for the encouragement of travellers in general, the results, direct and indirect, which were achieved by it. You remember that you saw here on that occasion a Yarkandi, Niaz Muhammed, who was the first Yarkandi who had ever visited Europe; and whom I had brought over to this country with a view of making him, as far as my own humble means might permit, a pioneer of civilisation among his own countrymen.

great literary work on "the Languages and Races of Dardistan," two parts of which have been already laid before the Society, unanimously resolved at its last meeting, respectfully but urgently to request your Grace to enable Dr. Leitner to accomplish his purpose by granting him the required leisure while staying in Europe.

For the Society is of opinion, that while the results of his journey already published fully entitle Dr. Leitner to the sympathy and gratitude of philologists, his great undertaking could not be brought to a speedy and satisfactory termination, unless he was temporarily relieved of all his official duties, and unless he could utilise the literary materials only to be found in Europe.

I have the honour to be, my Lord Duke,

Your Grace's obedient, humble servant,

(Signed) T. HEWITT KEY,
President of the Philological Society.

His Grace the Duke of Argyll, etc., etc.

Other Societies and Scholars in England and the continent expressed their appreciation of what Dr. Leitner had already done and, in various ways, endeavoured to assist the efforts made for retaining him in England. Drs. Beddoe and Seemann, in their capacity as President and Vice-President of the Anthropological Society wrote to the "Standard," December 6th, 1870, as follows:

CENTRAL ASIA.

TO THE EDITOR: SIR,—On the evening of the 30th ultimo, Dr. Leitner delivered before the Anthropological Society a remarkable discourse, in which he sketched out, as far as time would admit, his important philological and anthropological discoveries in the hitherto inaccessible region of Dardistan, and on its Tibetan frontier.

There was but one feeling among the audience, after listening to the modest but eloquent address of Dr. Leitner—one of regret that, owing to his not having been able to procure an extension of his too short leave of absence, not only must we be precluded from hearing him further on these matters, but, what is of vastly greater importance, science may suffer materially through his being unable to carry out in Europe, within reach of good libraries and of the assistance and criticism of other philologists, the arrangement and development of the materials he has collected, including his MS. treasures from Balti."

JOHN BEDDOE, M.D., Pres. A.S.L.

BERTHOLD SEEMANN, F.A.S.L.

Anthropological Society of London, 4, St. Martin's Place, W.C.

This man was well received here; and as one of the results of that kind reception, I may mention that he has since been enabled to render the Government substantial service in a matter which at one time created considerable public interest, namely, the murder of Mr. Hayward, and has submitted to Government a very full and, I am convinced, a very trustworthy report as to that murder. This report was liberally rewarded, and the reproach that we all felt had been incurred at that time, namely, that the man had not received the recognition in this country that he deserved—this reproach has, by the subsequent action of Government, been in a very great measure removed. This man, who is now doing pretty well, has just written me a letter, in which he mentions his great pleasure at having visited Europe; and in which he declares his intention of again coming to this country in the course, perhaps, of next year, this time at own expense.

Indirectly also, it cannot be denied for a moment that the action of so many societies concentrated on one subject was intended to have a very great effect in stimulating the Indian Local Government generally towards philological and other inquiries; and in the task which was set to Dr. Bellew by the enlightened Panjab Administration, as well as in the greater attention paid to archaeological and other inquiries, I have no doubt that what you and other societies did then had some influence. Mr. Grant Duff also mentioned the arrival of a Yarkandi in Europe in his address to his constituents. A second mission was organised to Yarkand; this has now been followed by a third mission, which to all appearances promises to do very well indeed. There seems to be no risk whatever connected with the mission; if you refer to the "Times" of Nov. 24th, you will find that there are twelve thousand coolies, a few thousand baggage ponies, and so on, besides hundreds of men, Europeans and others, so that we may look upon this mission as being likely to be a success.

Again in 1869, we could not help regretting that the action of our travellers had to a very considerable extent been thwarted by the Maharajah of Kashmir; we can now congratulate ourselves on a change in the attitude of that feudatory, that is if we can trust the account in the "Times" of Nov. 24th, namely, that the Maharajah of Kashmir has, as far as *this* mission is concerned, given every possible assistance. I fear it would take a very long time to convince me of the thorough loyalty of that feudatory: but, at any rate, we have before us one particular gratifying fact, and we need not, perhaps, rouse any apprehensions such as I raised in this very room four years ago, with regard to the fate of Mr. Hayward, an apprehension which

unfortunately was actually verified. So you see, gentlemen, there has been some justification for your action; what with the greater attention that missions to Yarkand have received, and in the matter of the probable return of Nyaz Muhammad *Akhund*, as he is now called. I may mention why. He has been enabled in this country to acquire a greater knowledge of his own religion than he possessed before, and so far from having made his countrymen afraid of an hostile influence having been brought upon him or his religion—a very delicate point with all Muhammadans—he has got now the learned and sacred title of “*Akhund*,” and is coming back to us with, let us hope, additional information, and the same strong desire to acquire a knowledge of our civilisation.

The last, if least, important result of the action taken then by the societies was that it, of course, stimulated me. On my return to India, I found myself charged with additional work. My health broke down. A change to the frontier enabled me to gather information, and when I finally obtained the only holiday possible to a literary man under the Indian Government, that of being laid up with sickness, I was enabled, in remembrance of the debt that I owed to the various societies in England, to put on record, in a more or less fragmentary manner, the legends, the songs, the customs of the people that live between Kashmir and Badakhshan, together with a detailed history of the encroachments of our feudatory, the Maharajah of Kashmir. Thinking that perhaps this might be my last opportunity of showing that your confidence in me had been rightly placed, I wrote, from my bed of sickness, at the end of three years in India, the work which is now before you; namely “*Dardistan*, Part III,” and which I would have brought out in six months, and in a better form, had the solicited leave been granted to me in 1869. Although, unquestionably, the least important result of the action taken by you then, it at any rate shows that I have not been regardless of the claims which every literary man owes to the learned societies that interest themselves in his behalf. In fact, I may go so far as to say that had the existence and history of these countries, especially of Hunza and Nagyr and other countries, been so thoroughly known in 1869 as it is now, possibly the discussions, more or less of an uncertain character, that have taken place with regard to the Russian boundary in Central Asia and the so-called “neutral zone,” would have taken the character which accurate knowledge would have given it, and that we possibly might on this present occasion have been able to congratulate ourselves, if not on the results of our diplomatic wisdom, at any rate on our possession of that quality. At present, the

boundary is faulty, ending at Derwáz, the very place where it ought to begin, and where it ought to cut off any possible invader from the most accessible and direct route that anybody could travel, namely, the road down to Chitral into Peshawur. I say now, as I said in 1866 and 1869, that the road from Ladak to Yarkand, on which three missions have proceeded, is not the road to Central Asia, either for military or commercial purposes.

I could not delay much longer expressing my thanks to you, although, as you can perceive, I am still suffering from ill-health. So improbable was it though that I should return to this country, that some of the collections that I had made, which were very small indeed in comparison to what I have brought now, were scattered and sold during my absence; and that articles which were taken word for word out of "Dardistan, No. III," were never acknowledged. Without pretending that there is any particular necessity for acknowledging the source from which they came, it seems to me that this, although a purely personal matter, has so far an importance that travellers, who are constantly obliged to go back and to leave the results of their explorations in this country, should be enabled to count on a certain protection of their literary property or creations whilst away; and you may be sure I would not have referred to this, a very small personal matter, if a greater matter had not been involved, namely, the protection due to such property by the learned societies.

I have also much pleasure in referring to an exceedingly plucky and, I think, wise resolution of your society, which will enable me to enter immediately on the subject which we have in hand, namely, you resolved at your meeting in November 1869, "that the exploration of our frontier and of the countries near to Central Asia, which are at present an almost *terra incognita*, is of the utmost importance to anthropology; and that the Indian Government will confer the greatest boon upon our science by giving whatever support and encouragement it may have in its power to those enterprising and courageous travellers who are able and willing to risk their lives in this attempt." This seems to me a very wise and plucky resolution, and I have not the least doubt that it had its effect on those who heard it, for I believe that it takes a great deal to baulk either a Briton or a German if he makes up his mind to do anything. There are a great many men who, whatever the Government action may necessarily be in a matter, would go and do a thing, and as the Government itself is composed of gentlemen very much interested in such matters, they each privately very much admire the resolution which they cannot officially endorse. But in a

more direct manner, what you then resolved has been attempted by Mr. Downes, who crossed the frontier in the early part of this year on a missionary expedition. However, he had scarcely been away a few hours from Peshawur before he was brought back. But you must not think for a moment that he was the only one who has crossed the frontier since 1869. There are a number of men, quite unknown to fame, of European extraction, who have done it. It would be a very curious chapter to narrate the history of the enterprising men, who without any wish to figure before learned societies or to have their name enrolled as famous men or anything of that kind, have done very great and daring deeds indeed, partly from religious and partly from mercantile motives, and partly from the mere desire of adventure.

Now on the subject before us this evening, it so happens that all classes of the British public can most cordially unite. I do not know whether this is the case with every question that comes before the Anthropological Society; but this is a question in which people anxious for the promotion of their religion, people anxious for the abolition of slavery, and people anxious for exploration on a field which is almost unknown, with the exception of the few certain data that I am going to give this evening, can most cordially unite. To begin with, under a religious aspect, it appears that these tribes who inhabit the slopes of the Hindu Kush and of whom so much has been said and very much more has been conjectured, because on a subject about which one knows nothing, all can conjecture, consider themselves a sort of country cousins of our own. When Sir Wm. Macnaghten was at Jellalabad, a number of the Siah Posh Kafirs came to welcome us as their brethren; but were received in a rather purse-proud sort of fashion, as relatives who are better off might receive them, and they went away considerably disgusted. But the feeling which they have of brotherhood to the Europeans, does not seem to have been altogether extinguished by that very cold reception. On other occasions the Kafirs have talked of Europeans, and, on the very rare occasions on which they have come across them, to Europeans, as their brethren. And, take the fact for what it is worth, General Feramorz, the great and loyal general who conquered for the present Ameer of Cabul the countries that he now possesses, used to assemble the Kafirs (and they were numerous) in the Ameer's service one day in the week, and used to tell them that Jesus was the Son of God, and that they were Christians, and that his ignorance of Christianity prevented him from saying anything more. Although their notions of Christianity, as you may imagine, may be of the very crudest and faintest description, still here we have got a field of operations on which,

without encroaching on the susceptibilities of anyone, we can cordially endorse the action of missionaries and others, who want to penetrate into that country. It is not like trying to subvert the beliefs of people, whatever grounds may be given even for that course of action, but it is bringing to a people who consider themselves the brethren of the European, a religion which *some* of them, at any rate, say that they profess, and which all of them, I believe, as far as outer indications may be trusted, are inclined to accept.

Gentlemen, we cannot afford to throw away any assistance that we may get towards the exploration of these unknown countries, and if we can stimulate the subscribers to the Church Missionary and other societies, to stir up their own committees to action with regard to Kafiristan, I believe we shall be doing what is right.

Secondly, we have lately been told a good deal about slavery. Sir Bartle Frere has been out to the coast of Africa, and his moral influence, or men-of-war, have had a certain success: but here is a state of slavery nearer to ourselves, with which we could grapple, a state of slavery existing within our own extreme frontier, and within a few miles of Peshawur. Although forbidden by the law it is nevertheless practically carried on, and as an instance of the truth of my assertion I may mention that being very anxious indeed to get a Kafir, and not knowing how to get one, the three men who were with Lumsden having been murdered *en route* back to their country, I communicated my wishes to a chief who has enjoyed very much the confidence of our Government, and I think deservedly so. This man said to me that I need not be under the least concern, for, no doubt, he could buy a Kafir at a village that he mentioned, which is within five miles of Peshawur. He said that Kafirs were sometimes brought down there for sale. When I replied that such a purchase was against our official rules and European principles, this man who had been so much in connection with us, and was much trusted by us, in order to allay my scruples, said, "Well, if your rules do not permit you to buy one *within* the frontier, I will organise a kidnapping party *beyond* the frontier, and I will bring a Kafir in."

This connivance at, or rather this non-suppression of, slavery, is a most serious political mistake, because these Kafirs keep the roads in a constant state of insecurity. The main road between ourselves and what is more especially called Central Asia, is most unsafe, because the Kafirs attack all travellers, and although they do not plunder them, as some people say, still they murder them, which of course has quite the same deterrent effect on merchants who want to go that way. The

Kafir, who is here to-night, assures me that his people would not infest the roads, if the kidnapping of Kafir children by Muhammadans were stopped; and that pressure should be put on our ally the Amir of Cabul not to purchase slaves. As he is extending his influence, or claiming to have already extended it to territories of which his ancestors never dreamed, and as we are supporting him in his ambitious designs, we have every legitimate reason, and are justified by philanthropy as well as good policy, to insist upon his showing a vestige of that power that he professes to have over these countries, by trying, at any rate as far as he is concerned, to stop the kidnapping; because the Kafirs say, "we will not have our children kidnapped to be slaves in the families of the most detestable race that we know, namely the Muhammadans." Although it may seem to you to be a very bold thing for me to assert, I am perfectly convinced that if such action were taken, the Kafir chiefs—at any rate those of Katar, with which place we have some sort of relations, and whose chiefs are powerful,—would keep a very large portion of the road open, and I have no doubt that all the other chiefs would eventually come into our territory or send hostages to our government as a sign of their good faith. This road of which I am speaking is the main road, not a round about one like the one that Forsyth and his party are going upon now, but the direct road; and *the* road to be opened up, if officials would only admit it, between ourselves and the Russians, would then be kept perfectly clear. This would be a tangible advantage for commerce both to ourselves and to the Russians, and to those countries, and it is a thing that might be accomplished. I do hope that I have sufficiently pointed out that this is a subject in which abolitionists would be greatly interested as well as religious people.

And thirdly, of course I need not prove to you that in the solution of the mysteries of the "neutral zone," geographers, ethnographers, and philologists would be alike deeply interested. With regard to geographers, I have not the least doubt that they ought to be, because as long as in our reports, written by most able and pleasant men, we have the name of a king of a country, to explore which thousands of rupees are paid every month to the head of the survey, put down as that of an "emblematical animal," it does seem that a further exploration of these countries would be a great advantage. When we find, for instance, the Kooner River made to run through Chitral, although it flanks Kafirstan; when we find Tshamkand and Chemkend put down as two places, although they are the same, only spelt differently, it seems that this is really a subject in which geographers might take a further interest. And when you come to ethnography, and

find most important questions involved, questions the solution of which affect the history of society; when you come further to philology, and find that here are races speaking generally true Sanscritic dialects, dialects which have suffered no phonetic decay as the Bengalee and the Hindi, but dialects which are sisters of the Sanscrit, if they are not, indeed, entitled to claim a much older relationship; when you find races preserving in the midst of secluded valleys a highly inflectional group of languages; when you see all that, and then come to this fact, that even so humble an inquirer as myself has been able to collect the vocabularies, which are here put before you, of ten languages that vary considerably, that vary as much, the nearest of them from the other, as the Italian from the French, and the furthest as much as the Latin and the Arabic; when you find all that, I need not press the subject further on your attention in soliciting that earnest efforts should be made towards bringing this most interesting triangle between Kabul, Badakhshan and Kashmir under proper, honest, and intelligent exploration, from every point of view. As for the question whether Government should or should not help, I think that might be left alone. Government, perhaps, is bound to follow, rather than to lead, in any question requiring special initiation or special enterprise. Perhaps, it is right that it should be so. Even if *one* individual were to address the chiefs of whom I have spoken, were to send them suitable presents, and were to mention the disgust that Europeans feel at slavery, his action would do some good; and I will say this, that if nobody else does it I will do it. I believe even that will have some effect, and Government which waits upon success, will no doubt, then support the enterprise in its most efficient manner. As for any fear about Government being involved in difficulties in the event of the death of travellers, I think that is a consideration which we may altogether dismiss from our minds, because as a matter of fact, people have been murdered and nothing whatever has been done; and the Affghans know, and the Dards know, and everybody else knows very well, that we cannot have power beyond the range of our guns, and that there is no reproach whatever incurred by the British Government by an European traveller being murdered. The Affghans, of course, know very well that they are subsidised to keep very little tracts of country open on very special occasions and that there the matter ends. Stoddart and Conolly, and others were murdered, and what was done? Hayward was murdered only the other day, and what was done? Nothing—and in this course I have not the least doubt that we may expect Government to persevere, and I do not know that we can expect Government to do anything else. When a difficulty arises, as

for instance, just now, in the case of the Bengal famine, as we have seen in to-day's papers, and actual work has to be taken in hand, then the men who are the firebrands of to-day become the saviours of to-morrow, and Government will appoint them to do any special work, which they cannot get done by those trusted, if incompetent, "*safe men*," who so deservedly draw the largest pay in times of routine for "*masterly inactivity*." You see this in the appointment, announced to-day, of Mr. Geddes, the former *bête noire*, who spoke of "the exploitation of India by the British," as one of the Famine Commissioners. It is private influence and enterprise that have gained for Englishmen and others the position that the European civilisation of to-day obtains on other continents. I see in this room the distinguished brother of a most illustrious man, Major Abbott, whose liberality made him the idol of the people in Hazara, whose name is still a passport to Europeans in many parts of that and other districts, and who did not view, without misgivings, the odium which the encroachments of the Maharajah of Kashmir on one of the Dard countries, that of Chilás, had already begun to throw on the English name among the hill tribes so early as 1851.

With regard to the country of Kafiristan, there are maps here which are, necessarily, more or less incorrect. This map, perhaps, is moderately good, and here you see the special country of the Siah Posh, the tribe, a representative of which is here to night, and who is a nephew of that famous general Feramorz. There, round Kafiristan, you have first the Nimcha races, or half-Muhammadans; and there you have, composed of that belt of Muhammadans, races that certainly profess to be very bigoted, but whose only sincere practice of religion as far as I have been able to ascertain, has been to kill or plunder travellers if they have the slightest thing worth robbing; their bigotry, as we from our Cabul experience know very well, can at any moment be subdued by their avarice. The country of Kafiristan, really embraces the whole of the country situated in that triangle between Kabul, Badakhshan and Kashmir, of which Peshawur is the base. In other words, I consider that the Dards themselves were Kafirs, as many of their legends, as their practice of witchcraft and a number of other things with which I need not trouble you just now, would seem to indicate. But Kafiristan in the most restricted sense, of course, would be only the country lying 35 deg. to 36 deg. lat. and 70 deg. and 72 deg. long. All these people are Kafirs, and to the present day Muhammadanism, except on the belt immediately between ourselves and these countries, sits very loosely indeed on the people. Even where they profess Muhammadanism it is not worth speak-

ing of; because when we find the bigoted Sunni rulers of Chitral forcing their own subjects to profess the Shiah or heretic creed of Muhammadanism, in order that they may have an excuse to their consciences for selling them into slavery, I do not think the religious feeling can be very strong. This is a fact which I mention incidentally, and which has enabled the ruler of Chitral to tide over a financial crisis in his own kingdom.

We have had all sorts of conjectures about these people, the Siah Posh Kafirs. The name is given to them by the Mahometans, "Siah"—black,—"*Posh*"—clothing, and "*Kafir*"—infidels. In fact, Kafirs are anybody who do not believe what the Muhammadans believe, therefore the name, to which no particular ethnological weight need be attached. These races call themselves rather by their villages and other local designations, such as the people, or, if you will, the Kafirs of Katár, Waigal, etc., etc.

The authorities on the subject are as follows:—We have the account of Mulla Najib quoted by Elphinstone; we have a short statement made by Burnes; we have a most admirable chapter by Masson, a man whose great services were ignored at the time, and are forgotten now. We have a philological chapter by Dr. Trumpp on three supposed Kafirs who came down to Peshawur. He spoke to them for a few hours by means of an interpreter, and although the necessarily scanty information thus obtained, apparently justified Sir George Campbell (the originator of my mission to Dardistan in 1866) in believing the dialect to be very closely allied to Latin, still, on further investigation, it turns out to be one of the numerous Kohistanee or hill dialects that are spoken just between our frontier and that particular country. Raverty takes Dr. Trumpp to task. I only saw his review of the dialect a few days ago, and I coincide with it. I may say that I have myself written down over a thousand words of that dialect. It is not a Kafir dialect at all, but I do not consider that Raverty was justified in the onslaught that he made on so eminent a philologist as Dr. Trumpp. Circumstances being taken into account, what Dr. Trumpp did was very valuable indeed. Then we have Lumsden, who had three Kafir guides. Lumsden interested himself very much in them, and also collected a vocabulary. These men as I have said, were murdered on their way back to their country, so that the man you see here to-night is probably the only surviving Kafir who has reached India. Bellew, I believe, refers to the Kafirs, and Wood mentions them incidentally. Fazl-i-Hakk, a native missionary, was sent by the Church Missionary Society, and you will find a full account of that expedition in the number of the "*Church Missionary Intelligencer*"

for 1865. He was exceedingly well received, a proof that they will receive Christians well, the Kafirs only wanting to be instructed. Colonel Macgregor has compiled from all these sources that I have mentioned, which, with the exception of Masson and Lumsden, are superficial and incorrect, a kind of statement for his "Gazetteer"—and finally there is what I have got myself, which is confined to the following sources. On my first tour I happened to get two Kafirs, who had been taken prisoners in the wars of our feudatory, the Maharajah of Kashmir, with Chitral under Aman-ul-mulk. These two men stayed in my house for a considerable time, and they are represented on that photograph of the Dards, which I now exhibit on this table.

Dr. Trumpp says that if you were to dress the Kafirs as Hindostanis, you would not know them from natives of the plains. I do not quite agree with that; look at the men on the photograph. I do not think they are Hindustanis; one of them had blue eyes; all were actually dressed as Hindustanis. Then I have had a Nimtcha Kafir, that is, a half-Muhammadan. These half-Muhammadans are people who keep up the intercourse with the outer world between the Kafirs themselves and the Muhammadans; of course they must have some communication, and these people who are called Nimtcha, or half and half, keep up that kind of communication, and the little trade there is which passes through their hands. (I repeat that the light thrown on the Kafirs by General Lumsden cannot be too highly valued. I suppose that Lumsden and Masson will carry off the palm with regard to that question, although, as I said before, it altogether amounts to very little.) From these three men I collected large vocabularies, and from the man who is here now I have derived other information. Here is a heap of papers containing the information thus collected, and I hope an opportunity may be given to me to go still further into the matter on some future occasion; at present all I can do in dealing with so important a subject is to speak generally; but I would say this, that the time has not arrived for the expression of any theory. It seems to me that the work can very well be divided between the learned men of Europe who theorise, and the men of India who collect the facts, and although it unquestionably may show a lower type of mind, not to be able to grasp the affinities between words of sixty different languages, and to find out that "filaloo" and "Bannu" must be identical, and Noah and Fohi could not but be the same names, still the work must be divided. I have chosen rather to be satisfied with the state of uncertainty in which we are, and to add one small fact after another, if possible

than to commit myself to any theory, such as the one to which, the other evening, an attempt was made to commit me, by a suggestion that perhaps the Kafirs were the lost tribes of Israel: they may be, but we do not know enough to justify us in that view.

The tribal divisions of the Kafirs are some say nine, some twelve, and others a still larger number. The Kafirs that I have had and the Kafirs of whom I have heard belong in my opinion to the following tribes (there may be more, but that is all that I know). First, the Kalásha Kafirs who are living under the paternal rule of the king of Chitral, whose management of the finances I have mentioned to you before. These are the Kalásha or Bashgeli Kafirs. They speak the language which I think, for all practical purposes, both of philology and for the use of travellers, I have committed to writing. I have not the least doubt in my mind that if you wish to penetrate into Kafiristan, your best course will be to go through Chitral, and then with your knowledge of this Kalásha language you may be helped on further. If you know the Kalásha language, you can go down, I think, all the length of the Koonar River, from Little Kashkar to Asmár. From Chitral you find your way into the heart of the country, but as I said before, I think the whole other side of the Koonar River is not Chitral at all, but belongs to Kafiristan proper. That is *one* tribe at any rate having a language of their own.

The second division is the tribes on the frontier of Lughman. They speak a different language, and profess different traditions. A member of a tribe of Kafirs of that frontier is in my service at this present moment. Thus we have at any rate two distinct dialects and, I fear, two distinct sets of traditions, of religion and of customs; if I have an opportunity I will go into that presently.

Then with regard to the other tribes that are mentioned and of which we have vocabularies, for instance, Lumsden's vocabulary and others, I think we are perfectly justified in assuming these to belong to a third and also totally distinct tribal division, that of the Kafirs of Traiguma, Waigal, Katár, Gambir (?). Beyond that there may be more, but I do not know anything about them.

Then with regard to their origin, we hear a great deal about their Macedonian origin. Now the looseness and vagueness of everything derived from Muhammadan sources cannot possibly be described. If a man is called Harût, his brother is sure to be called Marût; derivations are coined in the most extraordinary manner and without the slightest pretence to accurate knowledge. If Alexander the Great was a great man, he, of

course, must have been a prophet, and if he was a prophet, then, of course, they are descended from him. That kind of conjecture goes on; there is not the faintest endeavour to establish statements on a sure basis, and although there is not the least doubt, as I hope to show some evening by the production of the Græco-Buddhistic sculptures which I excavated on the Panjab frontier, that the Greeks had a great influence on the whole of the "triangle," yet the mere assertion that these Siah Posh Kafirs, amongst others, are descendants from a colony planted there by Alexander, must remain an assertion until it is proved to be a fact. Their own traditions do not bear that out, in fact they never heard the name of Alexander. Among the neighbouring races, those that can read a little, perhaps get hold of some Moonshee, whom fate may have driven up there and rendered crazy, and he may give them some notions of "Secundar with the two horns," or "Secundar, the conqueror of the two worlds," but that is not enough to establish a Macedonian descent. The Tunganis are also supposed to be Macedonians; they do not claim to be descendants direct of Alexander the Great, but of his soldiers—that is possible enough if the soldiers were there, and stayed any length of time. But you saw a Tungani, Niaz Muhammad who was here; he was a man with marked Chinese features, but I do not know whether he struck you as a Macedonian. He did not strike me as being one. On the other hand, we have historical evidence of the reigning families within this century, professing to be descended from Alexander the Great. We know also that the now displaced reigning family of Badakhshan claims that direct descent; the present have not been long enough in possession to do so. The ruler of Chitral calls himself Shah Kator, from the name of his grandfather, an usurper and soldier of fortune. Of course there are heaps of conjectures about that; the Shah Kator at the beginning of this century claimed to be descended at once from Cæsar and Alexander the Great. I may say incidentally, talking of Shah Kator, that the seal to the letter (produced by the Kashmir authorities in self defence,) that bore the authority for the murder of Hayward, was supposed to come from the ruler of Chitral, on whose seal that name would, probably, always be found. It was first adopted within this century by his grandfather. But on the seal in question authorising the murder of Hayward, the word "Shah Kator" does not occur. I mention this as an incidental fact on which I have no doubt I shall speak more on some other occasion.

The second supposition is that they are Zoroastrians. There is, no doubt, that after the murder of Yezdegerd at Merv, the Arabs pressed on Badakhshan, forcing the fire-worshippers into the

hills. I am afraid I am going to commit myself a little more perhaps in favour of their being Zoroastrians, although I do so with very great diffidence, but I will say what people allege in favour of the view, that they are descendants of the fire-worshippers. (I hope I have made it clear, that the Siah Posh Kafirs know nothing of Alexander, but that the surrounding dynasties have some sort of claim.) There are the Kafir names: you must have noticed when the Shah of Persia was here, there was Nasyr-ud-deen, and Barkat Ali and other names, derived from Arabic roots chiefly, but I do not think there was a single Persian with him called by any of the ancient Persian names; now these Kafirs are called by those names. I do not say that much importance ought to be attached to that, but it is a fact that they have these old Persian names—and where do you find them again? You find them amongst the Parsees with the *honorific* “ji” at the end. Thus you find the great Rustam becomes Rustumjee. The great name of Kaús becomes Cowasjee, Noshirwan becomes Nusserwanjee, Feram, Framjee, and so on—we have them amongst the Parsees and we have them amongst the Kafirs. What wonder then that these Parsees should be so very anxious to establish some kind of affinity between themselves and these Kafirs? When this man got to Bombay he created a considerable sensation, in fact throughout India he did so, because he was so very *different* from the natives of India, as regarded his whole bearing, his military appearance and his black goat-skin dress in which he looked a far less civilised being than he does to-night. They wanted to make out that here was a Zoroastrian, and they got hold of some member of a wandering tribe, who had pretended to be a Kafir, and they confronted the two, and it turned out that the other man whom they had fed all this time on the strength of his being a forlorn brother of their race, knew nothing at all of these countries, but that he was a mere vagabond, one of those vagabond races in Khorassan of which there are so many. This man in Bombay found it to his advantage to pretend that he was a Zoroastrian. There are the *names*, that goes some way; I do not know whether the feeling of the Parsees on the subject is a proof. It is also supposed that books exist in Kafiristan bearing out the view of their Zoroastrian origin. I disbelieve that *in toto*, because no Kafir that I ever heard of knew of writing, except he had been a slave captured and brought to the empire of Cabul, and had picked up some knowledge of writing there.

Then again there is a conjecture of Lumsden that they were driven from the plains of India into these hills. I do not hold that either. They are certainly not Muhammadans, they are not Hindus; they eat beef, they do not burn their dead bodies;

they have no knowledge of the Hindu deities with two exceptions that I will mention ; they do not look like Hindus ; and besides history does not bear it out ; although it is very true that the Sabaktegins did rather come down upon the Hindus, and broke the idols, and also caused a great many of the Buddhist sculptures to be buried ; but we find in the account that he *was fighting with the idolaters of Katar*, namely, the place from which this man comes. So that they were distinct from the Hindus with whom he also fought. I do not think they were driven in from the plains at all. Either they were driven in from Balkh, about the time when the Arabs got hold of the country and drove in the fire-worshippers, or else they are, what I imagine they are, aborigines, talking languages, sisters of the Sanscrit, not derivative from the Sanscrit. Probably they are Dards. This has given rise to incidental conjectures such as that these men are Arabs. The most eminent tribe in Arabia was that of Koreish from which Muhammad himself came. Of course, nothing was easier than for the Muhammadans, or even for the Kafirs themselves, to claim an Arab origin, as the Arabs had been "somewhere" about there; therefore, they called the Kafirs Koreishis, possibly on the "lucus a non lucendo" principle. I think they are aborigines, and that if they are not the ancestors of our Aryan race, they are certainly in an equal relationship as far as languages go with the Sanscrit.

I am sure I have taxed your patience beyond the limit of endurance, and so I will conclude, although there is naturally much more to say. I said before that they were not Hindus. They expose their dead in wooden coffins on the tops of mountains, and that would be something like what the Parsees do in their towers of silence. The Hindus, of course, are very anxious to claim them as their brethren, but I do not think the Kafirs look upon them as brethren at all. The two men that went through Kashmir and to whom I made some short reference just before, certainly mentioned to me the names of Indr and Mahadeo, but, on coming down to the Panjab, they had no doubt been tampered with, as regards their religious opinions, on their way through Kashmir, and therefore they said they knew these Hindu deities; yet when I asked them to mention a prayer, they could only mention this one:—"O Ruler of the seven heavens, the sun and the moon, give us plenty of riches." That was all, although they did mention the names of Indr and Mahadeo. There is a tendency to believe that the Hindus do not proselytise. I am not at all sure that this is the case. Of course, nobody can become a Hindu in any recognised caste, but as long as he will form a caste by himself, and fee the Brahmins, I have not the least doubt the difficulties of being admitted a Hindu could be over-

come. And in the case of the Maharajah of Kashmir, I have noticed the Buddhists who are the downright enemies of Brahminism, were beginning to be indoctrinated with Hindu notions, and in Ladak and Zanskar they were made to begin to think themselves Hindus, and it does not seem to me an unwise course on the part of the Hindus, because their religion is materially encroached upon by the Muhammadans, and I suppose they are just now at any rate blindly following the law of self-preservation and trying to amalgamate all idolaters, or rather all non-Muhammadans into one general community, as opposed to the Muhammadans.

Now with regard to this man, I do not know whether an opportunity will be given to me in this or in some other place to translate an account of his adventures through Central Asia, in company with the present Ameer of Cabul, to whom he rendered services. They are very interesting, and they tell us a great deal about countries about which we know very little. For instance, he can tell us a good deal of whether Faizabad and Badakhshan are one or two places. He can tell us about the routes to a very great extent, and can give a mass of most important information, of a miscellaneous kind certainly; but information which will tell us whether we were wise or unwise in so strongly identifying ourselves with the cause of the Ameer of Cabul, of whom, by the way, I may mention a very pleasing circumstance which I had communicated to me to-day. It appears that he is starting a native newspaper on his own account, called the "Sun of the Day." Thus for the first time in history, journalism will find its way into Cabul. It will not be very independent, you may imagine, but it will be something, because he will not be chronicling in that Journal, at any rate, that when he invites a chief to dinner he strangles him afterwards. That will be omitted, and the fact of such omissions, and only really praiseworthy acts being spoken of the Ameer of Cabul, will gradually lay the foundation, certainly of a very weak public opinion, at first, but of some public opinion, which may grow and which may do more than he at present anticipates. To return to this man; he feels very strongly on the question of slavery. I think he was captured when quite a boy. Although he has rendered loyal service to his captors, which is a characteristic of that race, renowned all over Asia as the best and most faithful of servants, still he feels deep hatred to them for having captured him; and in recounting the deeds of his most illustrious uncle, General Feramorz, he has mentioned to me with great indignation how it was when the man who had risen to the chief command of the Ameer's troops was murdered in the foulest manner, his murderer said, "Well,

what after all is it, he is only a slave, and I, who am a brother of the Ameer of Cabul, shall not be punished by my brother for murdering a slave, although he may have conquered these countries for my brother." That is the disparaging way in which a Muhammadan spoke even of Feramorz. The Kafirs are never converted really to Muhammadanism : they keep to their own beliefs which are very slight indeed, and of which I may say more perhaps by-and-bye.

Referring to this man's narrative, it seems that when the Amir's son, Yakub Khan, the man probably to whom Kabul will belong some day, because the present boy whom we are supporting is merely in the hands of a very small faction and has no footing in the country at all, who is in fact not descended from any distinguished stock—when Yakub Khan rebelled against his father, the following took place, to quote the words of the Kafir present to-night. "Yakub Khan at once seized the opportunity of taking Herat; I was appointed his special orderly. When Feramorz heard of the capture of Herat, he advanced with a numerous army, to Ard Asgand, which is near Herat. There the two armies met and fought, I was again wounded by a ball in the thigh and the wound often reopens. This was, among all the fights I have seen, a really good battle in which many leaders were killed." As a rule, Affghan battles are contemptible skirmishes, beginning with a lot of braggadocio and ending in a flight. "Fateh Muhammad Khan, the Amir's nephew, and his son and many great men were killed in this battle. In the tumult that raged, Feramorz wrote the following touching letter to Yakub Khan. 'I am as much your father's servant as your own. If you are killed, the Amir will grieve and what shall I say to him? Cease this unnatural strife. Enough and valuable blood has already been shed. If you however will fight, I am ready.' Yakub Khan replied by word of mouth, 'I am myself setting off to see the Amir. You are a slave, who are not authorised to give me advice.' The battle then ceased. Yakub Khan went off to his father at Kabul with a few Syads and a Koran on which to swear loyalty. When Aslam Khan saw this he thought that if he murdered Feramorz, his brother Muhammad Hussain Khan would, on hearing of it, slay Amir Shere Ali (Aslam Khan and Muhammad Hussain Khan were brothers by the same mother). In this way he thought the army and Herat would fall into his hands. Yakub Khan would be helpless as he was on his way to Kabul, with only a few Syads."

That is how in these constant intrigues nobody is certain for a moment. Men who go together separate on the field of battle, and exchange their fortunes very often without the least preme-

dition ; but simply as savages seize the moment. "Hussain Khan would take Kabul, and he Kandahar and Herat. This matter had been arranged by Aslam Khan, before he set out against Yakub Khan, and he had laid a mine from his house to that of Shere Ali, and given instructions to his brother to fire it as soon he heard of the murder of Feramorz. The Amir's army was at Sabzawar. Aslam Khan now arranged matters with Hasan Khan, commandant of the guard and his foster-brother, and with Ghafûr his cousin, that when he had retired to his tent after dinner, as he and his guest Feramorz were taking tea and playing at draughts, Ghafûr should shoot him from the Kharkhana (a hut made of thistles, and which, when watered, offers a cool resting place during the day), where he (Ghafûr) with the connivance of the commandant had concealed himself. The bullet struck Feramorz ; Aslam Khan threw himself on him, tore his clothes, cried and said, 'Oh such a general, and to be thus killed ! Alas ! who has killed such a hero.' The sentinel, attracted to the place, called out, 'You dog, who else, but you, has killed him in *your* tent.' I rushed in, for Feramorz was my aunt's son, and caught Aslam Khan by the throat. Then came in Islandiar Khan, colonel, also a Kafir, and Haji Faulad, colonel of the mounted artillery, and Changez, also colonel of artillery, all Kafirs, rushed in. Mulla Kurratulla Khan, a Hindustani general who has a great command, and Muhammad Alam Khan, nephew of Dost Muhammad Khan (who fought at Multan and in Turkistan), also came into the tent, we wanted to cut Aslam Khan's throat, but Feramorz said, 'Do not kill him, but bring him to the Amir in chains for judgment ?' Now it is something, when you consider the savage life which they lead, uncertain of its retention for a moment, and the passions of these people, to notice the conduct of Feramorz before the battle began in trying to stop the strife, and his conduct in not allowing the indiscriminate slaughter of the men who had caused his murder. "He had scarcely said so when he died. Such a man as Feramorz is indeed rare. We struck off Aslam Khan's turban, put him crossways on horseback in chains and sent him off to Kabul. We arrested the commandant of the guard, Hasan Khan, who said he had seen Ghafûr fire the shot, and Ghafûr, when confronted with Aslam Khan, said he would have been killed (such had been the threat) had he not killed Feramorz. Aslam Khan now admitted being the instigator of the murder, but said, 'he is only a slave and the Amir will not kill me for it. What is it after all ?' We kept Hassan and Ghafûr in chains and the army was placed under the Hindustani general. When Aslam Khan arrived at Kabul, the Amir did not send for him, but received his explana-

tion, which was to the effect, that he had been prompted by jealousy connected with some unnatural passion. This is untrue, as Feramorz was never guilty of such vices." Then, to give an idea of the way services are rewarded, his wife was given afterwards to a common Sepoy. "Aslam Khan was detained in chains in one of the offices of the Amir, and his brother was also thrown into the same prison." The fact of the mine had been betrayed. "Now the army came to Kabul, the Amir and Yakub Khan having made up matters. Aslam Khan had alienated the Amir from his son, and as the Amir had given all the power to Aslam Khan and Hussain Khan, Yakub Khan felt hurt and therefore had left Kabul. Aslam Khan wanted to usurp the kingdom, and when Yakub Khan used to come to the Durbar, the Amir would turn his face away; well, after three months of very severe treatment of the two brothers in prison, their two other brothers, Hassan Khan and Kasim Khan (all the sons of one prostitute) offered to the Amir to kill the prisoners themselves! The Amir who could scarcely believe them, sent Rustem Khan, treasurer, and General Daud Shah Khan, and eight orderlies with the two to see whether they would really kill their own brothers. At about nine o'clock in the evening the two went to the prison. The Amir's people stood outside. The two went in, each throwing a waistband round the throat of a brother, and dragging him hither and thither, throttled him. When they were dead, the orderlies buried them in their clothes, without any rites, on the spot. The Amir did not wish to bear the disgrace of himself ordering the execution of the brothers for the sake of the slave Feramorz. The Amir then sent the two murderers to the English to take care of." That is the way in which he got rid of his brothers, and the two murderers he sent to us to pension.

I think, gentlemen, that I have said quite enough to stimulate those who care for the abolition of slavery, those who care for the spread of their Christian religion among a people waiting to receive it, and those that care for the cause of increase of scientific knowledge, and to make them feel that the hour that they have given to the subject has not been altogether unprofitable.

DISCUSSION.

Mr. DREW: I do not like to trespass long on your time for this reason, that I know very little of the subject that Dr. Leitner has so well brought forward; but since I have been on the frontier of these parts, I may say a few words. With regard to the different theories as to the origin of these Kafirs, I am inclined, as far as I can form any opinion at all, to the last one that Dr. Leitner brought forward, namely, that they are a branch of the Dard race. Certainly, the

evidence with regard to their connexion with the old Persians is strong and not easy to get over ; at the same time, from my own experience of the few individuals I had the opportunity of seeing, and from what one generally hears of their characteristics, on comparing them with the Dards, with whom I am pretty familiar, I think, on the whole, the evidence tends that way, and it seems to me likely that if the inquiry were further followed out, we should be able to prove more distinctly than now that they are really closely connected with the Dards. I do not think I can say anything more with regard to it, as we have had so very few opportunities of meeting these people.

Mr. TRELAWNEY SAUNDERS: I think we are exceedingly indebted to Dr. Leitner on many grounds for the subject that he has brought forward to-night, and has illustrated in so able a manner. I must remember that I am addressing an Anthropological Society, and therefore I will proceed to remind Dr. Leitner of a statement made by Lumsden that throws a very distinct light on Dr. Leitner's own conclusions, that these people are Parsees—namely, their mode of burial. Lumsden tells us that it is the habit of these Kafirs to put their dead in boxes and expose them on the tops of high mountains: much like the Parsees of Bombay bury their dead to this day. Nothing to my mind would be much more striking than this identity of the funeral rites, in spite of conflicting local circumstances; for the Parsees of Bombay not having the top of a mountain to bury their dead upon, build high towers instead. With reference to the Kafirs being refugees from the plains, I think Lumsden intended it to be understood not that they were refugees from the plains of Hindustan, but that they were refugees from the surrounding low country. They have really chosen the very heart of these mountains, the very last and most secure refuge that these ranges afford. That is pretty well proved to us, if not exactly, by those who have advanced nearly to the country; at least, by those on the one side who have reached its confines, and those on the other who, with the eyes of science, have been able to fix the positions of the peaks by instrumental observation. We have for instance the description of the passes that touch upon the north western confines of Kafiristan, by the expeditions of Alexander Burnes; and then we have the observations by the Trigonometrical Surveys of the altitude of the range which you see on the eastward of the plateau in Lumsden's map. The ranges on the eastward of this country rise from the valley of Chitral, then descend westward to the loftier valleys of Kafiristan. The height of those peaks was over 16,000 feet, and the valley of Chitral itself, at the pass by which Kafiristan is entered, is only between 2,000 and 3,000 feet high. Timur made an attempt to pass into this country on the north west, but with the loss of a very considerable force; and since his time no potentate has attempted it. There can be no doubt that the Kafirs have been quite persevering in their endeavours to excite a friendly feeling on our parts; and I ask myself often, whenever I think of these people—of the position which they occupy in the

Hindu Kush, the commanding position they occupy, dominating the whole of the surrounding country—I ask myself whether the same reticence and indifference would be manifested towards them if they made their approaches to another people, who are advancing towards them from a northerly direction ; and I ask myself how our strategical position would be affected by the establishment in that country of the influence to which I have alluded. At present, Sir, these regions are in a very peculiar state. We have on one side the British sovereignty, on the other side of them the Affghan sovereignty, and beyond, what ? The sovereignty of Bokhara, which we may consider to be identical with the Russian sovereignty. Now what have we in the space thus surrounded ? Well, we have got a population of this character, that, whatever value we may attach to the claims of their chiefs to have descended from Alexander, the extraordinary permanence of the population of those mountains is undeniable. While the rest of Asia has been repeatedly overrun by invading hordes, this population has been very little affected by such movement. Dr. Leitner says himself that he considers them to be aborigines. I would scarcely pretend to form an opinion of my own against such an authority as Dr. Leitner, still I do not think people choose mountains for their residences till they are driven out of the plains ; and, therefore, I am rather inclined to think that he is more correct in considering that they are refugees from the plains.

Dr. HYDE CLARKE : I may attempt to say a few words with regard to Dr. Leitner's most interesting paper, and touching a subject which he has far from exhausted. Dr. Leitner has claimed the humble merit of being simply a collector of facts. I think it is only due to Dr. Leitner to say that in that capacity he is able to render and is rendering invaluable services to science. It is one thing for a man to collect facts loosely and indiscriminately ; it is another thing for a man having the scientific attainments of Dr. Leitner to bring to bear on each fact that he collects a vast amount of knowledge. With regard to that portion which he has more particularly touched upon—the linguistic portion—many of us know that Dr. Leitner himself is acquainted with almost every language that is known in the district, from the plains of India to Turkestan ; that he has a practical acquaintance with the whole of those. There can be, therefore, no greater service to science than when he collects for us materials on which we can rely. And what are those materials to preserve ? They are the materials which will really enable us to judge the early history of the Aryan race ; of those pioneers of it to whom no sufficient attention has been turned, while our studies have been devoted to the later periods of its history. In an anthropological point of view, these data are of importance. They are of interest to us in this Institute, because he has shown us in this instance that our science and our studies are of a practical character. If, indeed, the discussion has to a certain extent diverged into a political channel, it is because our researches are intimately connected with the welfare of tribes and government of nations. Mr. Clarke observes that, as Dr. Leitner has

referred to his identification of the Kajunah as a prehistoric language, the Kajunah may be referred to as an element in determining the question of the Dards being aborigines. So far as the language is concerned this may be regarded as unlikely, because the Dard being Aryan is modern and intrusive on the Kajunah. It is necessary to ascertain whether physically the population is directly descended from the prehistoric Kajunah, or whether it is a supercession by Aryans, with evidences of Kajunah survival.

THE PRESIDENT: Although the hour is rather late, I think it would be as well if I should request Major Godwin Austen, who has spent a good many years in the hill country of India, to favour us with some observations upon this subject.

MAJOR GODWIN-AUSTEN: I have never been nearer to that part of the Himalaya range than Astore and Skardo, therefore I know very little of the country under review; nor have I seen before to-day any of the men from that part of the world. The paper we have heard is an exceedingly interesting one, more especially, I think, as regards the lines of route which may be eventually taken from the Peshawur frontier to the side of the Oxus across the main range. No doubt, the most direct line through that part of the country will lie over the passes of the Hindu Kush.

MR. WM. VILLIERS SANKEY: I am exceedingly pleased to hear so interesting and so instructive a description of the characteristics of the country, and of the people round about the frontier of our Indian Empire. Nothing could be more admirable than the very extraordinary details which we have had placed before us in so concise a form, in such lucid language; and they will be exceedingly useful. As Russia is close upon our frontier, I believe it most important that facts of this kind should be collected, and those facts seem to me to be extremely conclusive in themselves as to the attitude we ought to assume. With regard to those border tribes being driven from the plains there is one question, and that is respecting their mode of burying the dead. It remains to be seen whether they themselves did not retire into those mountains for the sake of not being cut off in the plains, and with a view of being able to follow out that particular custom of exposing their dead on lofty summits, which they seem to consider as necessary to the preservation of their religion.

The principal reason I have for speaking is, that more than thirty years ago I proposed a direct route, *entirely by land*, from London to Calcutta, NOT A SINGLE PORTION OF IT BY SEA; and that has been the origin of a great many different projects for making a railway across the Channel, the Bosphorus, and various other portions of the route which are more or less intercepted by water, and which were all originally part of my scheme. My project is and was entirely by land, and I still persevere in endeavouring to have it carried out. Dr. Clive, Assistant Comptroller-General of India, who is sitting by my side, suggests that, in order to the prosecution of that idea, a portion of the line might well be made *between our Indian network of railways and the Persian territory*, where that line is to extend which is to be made by the influence of the Shah's late visit. I sincerely hope that his

suggestion may be approved of, because it will be an earnest of my great line being entirely carried out. I do think that discussions like these tend usefully to facilitate such operations. The great point is to know the people who surround our frontier, to conciliate them as much as we can, and in that way to bring about that relationship between India and the metropolis of the world which I believe to be requisite as well as highly desirable, and which it would be dangerous for our Government to neglect to promote.

Dr. LEITNER: I only wish to say a few words in reply. First, with regard to Mr. Drew, I am very glad indeed that he thinks that there is some weight to be given to the opinion that the Kafirs may turn out to be Dards; in other words, that my discoveries in 1866 are, as it were, completed by the explorations or investigations that I have made in 1872, so that they are all being brought under one great general name of Dards. In fact, I may say that the name Dardistan, which I believe I was the first to give, has been adopted by Mr. Hayward and others; and that, therefore, the name seems now to be accepted with regard to the countries of Chilás, Ghilghit, Yasin, Chitral, Hunza, and Nagyr. If the more comprehensive hypothesis now advanced turns out to be correct, then it would embrace very much more, and we should then have the whole of this country lying between Kabul, Badakhshan, and Kashmir under the name of Dardistan. Whether or not another hypothesis is correct, viz., that these countries of Dardistan proper are the Darada of Indian mythology would form a special inquiry. Mr. Drew is a good authority on matters connected with Kashmir. He has been to Gilgit in charge of a very important inquiry, where I had previously been myself, during 1866, when all the tribes gathered in order to resist the encroachments of Kashmir, and where I had to make my way as best I could to the fort, at that time in disguise. You may think it rather egotistical, but here is a portrait of myself in an illustrated newspaper, which may show you that a European may be disguised very successfully. I may also mention that when the commandant of the Gilgil fort asked me who I was, the fact of my having just gone unopposed over the fort, then in a state of siege by the Dard tribes, and seen in what a disreputable condition it was—full of dirt and the Maharajah's soldiers dying of fever, whilst the commandant was just able to open his eyes after an indulgence in opium—my natural indignation exceeded my determination to keep my disguise—orders having been sent to get rid of me—and I said "I was a European, and ordered him to clean out the fort," *which he did*. As to Timur, Mr. Saunders has made some important remarks, with some of which I agree. Timur obtained a partial success against the Kafirs. He advanced against them in two large columns, one of which managed to raise a fort, but, somehow or other, I do not think they went very far. He thought, however, that he had done sufficient, and he got the exploit inscribed, I believe, on a golden tablet, with the following words, "That he had subdued the tribes that even Alexander the Great could not subdue." So here seems to be something again

against the idea of their Macedonian origin. Then Sultan Baber, who came about one hundred years afterwards, struck up a friendship with them, because he himself was rather given to drinking, of which the Kafirs show a Christian rather than a Muhammadan fondness. With regard to Lumsden's and Trumpp's opinion, it has always occurred to me that Lumsden meant that they had been driven into the hills from the plains of India, and that is how I have read it. It seems to me that Trumpp tried to support himself by the authority of Lumsden, or that they supported each other. Trumpp thinks them inhabitants of the plains, and at Vienna, Prof. Frederick Müller thought also that they were inhabitants of the plains of India; but if Lumsden meant "inhabitants of the plains of Balkh and about there," then I should be inclined to agree with Mr. Saunders. We know as a matter of fact that Balkh has always exercised a certain influence on Badakhshan, because the necessities of hill life compelled the men to go to Balkh for many of their wants. Whether or not the secluded valleys of Kafiristan offer shelter sufficient to account for the existence of aborigines is another matter; but supposing that Lumsden's view was that they were the inhabitants of the plains of Balkh, then, of course, that would rather fall in with my conjecture about their Zoroastrian origin.

MR. SAUNDERS: Perhaps it would be convenient to the meeting if I say I do not claim for Lumsden that he specially alluded to the plains of Balkh, for he rather appears to allude, so far as he alludes especially, to the lower country to the south, and makes some distinct allusion in proof of his position, which I cannot quote from memory; but I have no doubt, your attention being drawn to it, that you will look into it.

DR. LEITNER: I am very much obliged to you. This is a most interesting point, and I shall be very glad to find that I have support in a matter of this kind from so great an authority as Lumsden. With regard to the change that should take place in our policy, I certainly quite agree with Mr. Saunders. The way in which things are going on now is most lamentable. Obstructiveness and red-tape and want of knowledge seem to be taken for impartiality and for good government. The more ignorant a man is on the subject, the more he thinks that he can be perfectly impartial, and so no doubt he can be in one sense. For instance, the last time I was in England I stated—I think it was at the Geographical Society—that the Abbot of Pugdal had offered to send his nephews as hostages to the British Government, in order to guarantee the safety of any traveller who might wish to go with him to Lhasa. The way this offer was brought about was this. The intrepid savant, Csoma de Körös, a Hungarian, whom, I think, *you* [addressing Dr. Campbell, late of Darjeeling] so well knew, lived for three years in that remarkable monastery of Pugdal, which is quite scooped out of the rock; and which looks like a temple of gnomes surrounded by their cells, out of which the Lamas emerge above and below, and at the sides of the middle dome. There he ate his rice and lived in a most abstemious

way, and probably effected the improvement I noticed—namely, the abolition of the convenient worship by the prayer-wheel. As for the Abbot himself, his contempt for the gods of Buddhism (for, in its present degenerate form, its teachers or saints are practically gods) equalled any contempt that we may have for idolatry. This is a great testimony to the influence exercised on a Tibetan priest by an European scholar. Csoma de Körös' dearest wish, which he did not live to carry out, was to penetrate to Lhasa in order to complete his Tibetan studies, and this wish the Abbot wanted to fulfil vicariously by offering to take any countryman of the "Pelingi dasa," or European disciple, to Lhasa. A regular choral service, antiphonal in its execution, is carried on in that very monastery; yet it seems that there is not much belief there, because when I asked a strange priestly guide, who brought me further on, whether the road was far, he said, "Nothing was far;" whether Buddha was anything, "No, Buddha was nothing." He was a complete Nihilist. However, when he ran the risk of being swept away by a torrent, I could not resist the temptation of asking him whether *that* was nothing, to which he did not reply. [In answer to an inquiry made by a visitor.] The fact is, Buddhism, although utterly subversive of the gods of Brahminism, has practically reintroduced them. There is Græco-Buddhism and Llamaic Buddhism. Now, Llamaic Buddhism has reintroduced the gods that Buddha got rid of. In fact, this subject may be carried farther, and nothing can be easier than to say that Pythagoras himself is, as his name shows, "Buddh agoras"—the announcer of Buddha. Some of the French missionaries were supposed to have lately gone to Lhasa, but we do not know anything about them or their visit—have never seen them. To go back to what I was saying, here was a good offer for the solution of a number of questions since the days of Huc and Gabet. The abbot said he would undertake to bring anyone to Lhasa, and was willing to leave his nephews as hostages, but I am not aware that this offer has been made the least use of. That the Russians neglect no opportunity of advancing their interests—and far be it from me to say that when we do nothing the whole world should do nothing—is proved by a circumstance which may be narrated to you by this very Kafir, that immediately after the conclusion of the meeting of Umbala, in which we made terms with the Amir of Kabul, and subsidised him, giving him money to equip an army, which he has never paid away, and to develop the resources of his country, which never sees our rupees, there came Russian who was in close confabulation with the Amir of Kabul for a fortnight, so you see that the Russians do not neglect any opportunity and great credit is due to them for it. We ought to change the whole of our attitude with regard to frontier matters, for things are really very serious as they are going on now. These tribes are being hemmed in by Cashmir on the one hand, and by the Amir of Cabul on the other, who claims a lot of territory that never was his. His family was not very much, and they have had but very doubtful possession of Balkh. Even Dost Muhammad had very

doubtful possession of Balkh, and was himself a fugitive in Bokhara ; and now we have supported the claim of the Amir of Cabul even to Badakhshan itself, where, if there is any truth in the tradition of a descent from Alexander, it must be found in the royal house of Badakhshan. One disastrous result of our influence is, that as Muhammadanism increases, all these legends, these songs, these traditions of the Dards and Kafirs, which centuries of barbarism have respected, are swept away. Races who only wanted to be let alone, are edged on to the verge of exasperation, and infest the roads, because they do not want to have their children kidnapped. The Dards are being massacred. The women of Yasin, women who are as fair as Englishwomen, were massacred by the troops of the Maharajah of Kashmir ; and Hayward counted I do not know how many hundred skulls, when he visited the spot some years afterwards. On every side are there legends ascending to the remotest origin of Aryan speech and mythology ; but who knows that the accident of their being now partially embodied in the book ("Dardistan, Part III") before you, may not have been a most fortunate event, for with Muhammadanism and its fanaticism closing round, legends are wiped out, traditions are lost, and I suppose the time may come when the last Kafir girl will be sold by her own father to a Muhammadan to avoid a worse fate for himself and her. This is the present state of things ; whilst, if we took the other line of conciliating and preserving the independent mountain tribes, we should then have friendly populations, open to our civilisation, and to our scientific inquiries. Supposing, however, that you do want to give to irresponsible feudatories all the power which their ambition desires, then insist at least on their behaving as civilised feudatories of the British empire should behave, and—as one proof of their sincerity, and some return for our money—abolishing that dreadful state of slavery which they support, either directly or indirectly. I was very much interested in the kind words that Dr. Hyde Clarke spoke. We owe Dr. Hyde Clarke a considerable amount of gratitude for having pointed out that the Kharjūnā, one of the languages which I discovered, is one of the remnants of a group of languages spoken before any of the Aryan dialects developed into "the perfect" dialect, namely, the Sanscrit. Great service to myself, and also, I think, to science generally, has thus been rendered by Dr. Hyde Clarke. I wish that Mr. Sankey would carry a railway through this country. If the account of Jamshēd can be trusted, he says it is very easy to carry on a railway from the north, right to the foot of the Hindu Kush. He says the country above is a plain, and it is very easy travelling and all that, and I wish Mr. Sankey God speed, I am sure, in that undertaking. Then with regard to this Kafir, I have brought him just as I brought the other man, in order that he should remember this country, not by the kindness of one, but by the kindness of many. The influence that a single European can exercise is no secret ; it is gained by a little hospitality, and a little friendliness. I keep, I was going to say, my house open in India, but I remember that

these people get into one's compound, where our servants' houses are in India ; so I keep my compound open for any visitors from or beyond the frontier ; they come there and enjoy a very cheap hospitality, which, all through the year does not cost me £100, and they go and tell their friends and others of a European's hospitality, and so I get information from them. They go away and mention that a European has treated them well, and I think that does some good to explorers. Niaz, your late Yarkandi friend, is now set up, and is doing very well, and will remember us. I hope the present visitor will be shown some of our institutions, and will be taken a little by the hand. I have not the least doubt, that if Mr. Sankey carries his railway through that country, he will be treated with very great hospitality, at any rate by the Kafirs, whilst we, who have been kind to our "Macedonian" brother, will have the advantage of being deified in Kafir mythology, because they gratefully raise all those to the rank of gods, who treat them with hospitality.

The PRESIDENT : I am sure, after the reception given to the excellent discourse we have had, it is quite needless for me to move that the thanks of the meeting be given to Dr. Leitner, for his very admirable address. I must for my own part say, I do not remember ever listening to any communication given before this Institute, of higher and more general interest, than that we have heard to-night. Its interest, as Dr. Leitner has well observed, is manifold ; it concerns the physical anthropologist, as well as the philologist ; the ethnologist and the geographer will also find in it points of the greatest value. And from what appears this evening, its interest extends in a certain degree almost beyond the legitimate subjects of the Institute, which has no concern with politics. But I must say, that all the observations that have had a political tendency which have fallen from either Dr. Leitner, or those who have spoken on the subject, are of the very highest importance, and such, I should imagine, as if brought before the attention of those in whom the destinies of this country are reposed, cannot fail to have a beneficial effect. The spirit in which they were offered is such as can give offence to no party, though it indicates a true and genuine interest in the people to whom Dr. Leitner's observations refer, a race, I should imagine from what has fallen from him, whose history must be very curious. With respect to their origin, of course I am not prepared to offer any observations, and must leave that to be discussed by Dr. Leitner at some future time. I was struck, however, with one observation that he made with respect to a tribe, I suppose not the same, in which he says that the women were as fair as Englishwomen. Does the individual, Dr. Leitner has been good enough to bring with him this evening, belong to the race to which he refers, or to some cognate tribe ?

Dr. LEITNER : I believe that further inquiries will show that they are cognate. This man is a Kafir and much darker than the Yasin women to whom I have referred. He has seen a good deal of fighting, and has been much exposed.

THE PRESIDENT : I am one of those who believe that ethnological evidence derived from language or religion is, in many cases, less reliable than that from physical characters ; and it would have been very interesting indeed if we had had materials, which of course are not before us, to have discussed that part of the subject rather more fully.

MR. DREW : I have seen many Dards between Gilgit and Yasin much lighter than the present individual. *

THE PRESIDENT : No doubt it is a question of degree, for I may mention, that even among the Marquesas islanders for instance, the women of the interior of the island have been described by writers as certainly quite as fair as Spanish or Italian women, and it is very likely that women may be found in a secluded mountain valley of a much fairer complexion, though belonging to the same race as the individual whom we now see. Before sitting down, in moving that the thanks of the meeting be given to Dr. Leitner, I must not also omit to mention the obligations we are under to Mr. Saunders, for the kindness and alacrity with which he procured this map for the purposes of the evening. I move that the thanks of the meeting be given to Dr. Leitner for his very interesting paper.

Dr. Leitner was accompanied by a native Siah Posh Kafir.

Thanks having been voted to Dr. Leitner for his communication, and to Mr. Trelawney Saunders and Mr. Wyld for lending maps on the occasion, the meeting separated.

DECEMBER 9TH, 1873.

F. G. H. PRICE, Esq., F.R.G.S., *in the Chair*.

The minutes of the last meeting were read and confirmed.

THOMAS GEORGE BIDDLE LLOYD, Esq., C.E., F.G.S., 6, Cecil Street, Strand ; and Señor GONZALES DE LA ROSA, F.R.G.S., were elected members.

EDWYN C. REED, Esq., of the Museo Nacional, Santiago de Chile, was elected Local Secretary for Santiago de Chile.

The following presents were announced, and the thanks of the meeting voted to the respective donors :—

FOR THE LIBRARY.

From the Executors of the late HENRY CHRISTY, Esq.—*Reliquiæ Aquitanicæ*. Parts XIII and XIV, 1873. 4to.

VOL. III.

B B

- From the AUTHOR.—A New Physiognomical Chart of Character. By Dr. J. Simms. 8vo.
 From the PUBLISHERS.—A Dictionary of Languages. 8vo.
 From Dr. HOFFMAN.—Mittheilungen der Deutschen Gesellschaft für Natur und Volkerkunde Oslasiens, July 1873. 8vo.

FOR THE MUSEUM.

From J. GOULD AVERY, Esq.—Two Maori Skulls, found in a cave near Auckland, New Zealand.

The following paper was read by the author:—

The HIEROGLYPHICS of EASTER ISLAND. By J. PARK HARRISON, M.A. With Plates xx and xxi.

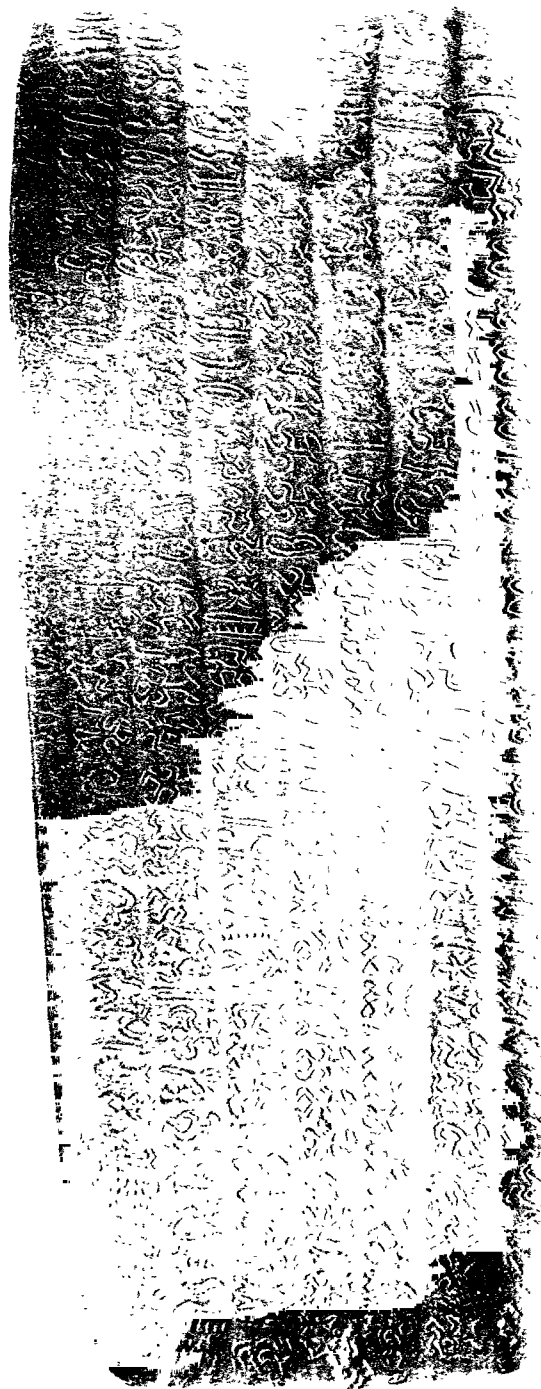
IN the spring of this year (1873), the cast of an incised tablet from Easter Island, the duplicate of one of those lately presented to the Anthropological Institute by Mr. Edwyn Reed, was exhibited at Burlington House by Mr. Lamprey, of the Royal Geographical Society, from whom I subsequently learned, that the French Missionaries in the Island discovered three tablets of hard wood soon after the visit of H.M.S. "Topaze" in Nov. 1868, in one of the stone houses, called by the natives "Taura Renga," where the kings or chiefs formerly resided.* Two of these tablets were entrusted to the captain of a Chilean corvette in January 1870, and they were soon after deposited in the National Museum at Santiago de Chile. The third was sent to Paris, but does not appear to have reached its destination owing to the war.

Paper impressions of the tablets at Santiago were communicated to the English Ethnological Society early in 1870. Owing, however, to injuries received in transit, and the want of sufficient information, a doubt arose whether they were anything more than stamps for marking the native cloth,—and this view, it appears from Petermann's "Journal," was adopted in Berlin also,† to which city copies had been despatched. Little attention has, it would appear, been since given to the subject, though casts subsequently made under Mr. Reed's direction were sent early in the present year to London, Berlin, and Cassel.

On a superficial examination of the signs with which the tablets are covered, an eye acquainted with Easter Island

* The photograph of a drawing of one of these stone houses, is given in Mr. C. Harrison's "Ethnographical Series," published by Mansell.

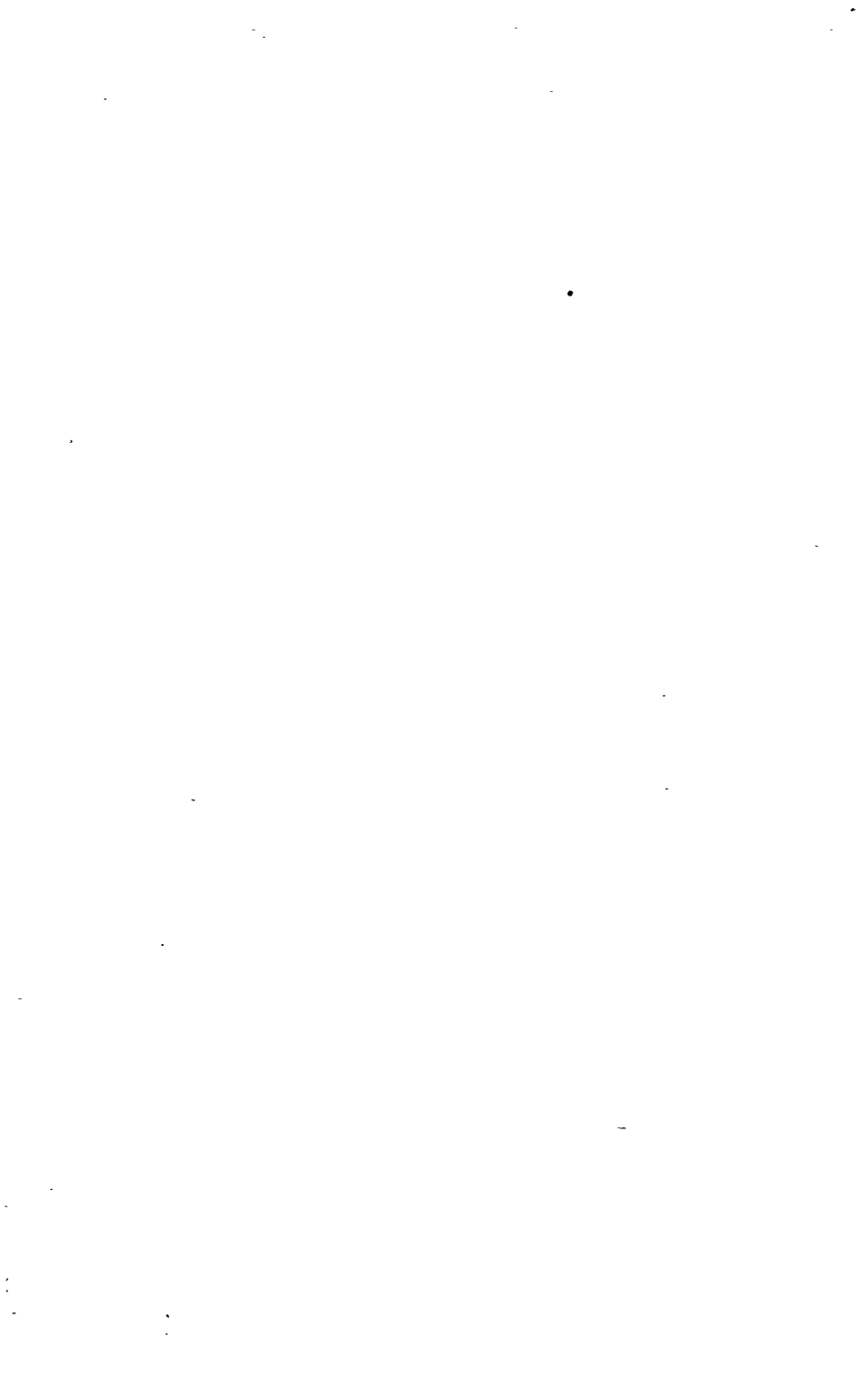
† "Mittheilungen," July 1871.







Inscribed Tablet from Euter Island. Back.



iconography would at once detect Herronias—(as the natives style the figures of bird-headed men),—Rapas, and other forms such as are cut on the back of the larger stone statue in the British Museum, and upon the heads of the wooden images which from time to time have reached this country, and seem so distinctive of Easter Island work. Similar forms are also said to be painted on the walls of the stone houses, and to be sculptured on rocks, and the tuffa crowns of the great images.* It was soon perceived, however, on a closer examination of some rubbings furnished by Mr. Lamprey, aided by frequent reference to the plaster casts, that there were, in addition to the figures above alluded to, numerous other forms engraved on the tablets, which have no types in Easter Island, but can be identified, with more or less certainty, as belonging to islands far to the West. It would seem evident that the native artist intended to represent actual objects which he had either seen himself or received accounts of from others who had crossed the Pacific.

The wood of which the tablets are formed was identified by Mr. Reed as that of *Edwardsia*, a species of *Mimosa*, which in Chile attains a considerable size; and, from seeds obtained from Easter Island, he ascertained that the tree exists there also. It was recognised previously by Mr. Palmer, the surgeon of the "Topaze," on the spot in 1868.

From the report sent to the English Admiralty by Commodore Powell, it appears that the Easter Islanders now make their paddles and diminutive boats of *drift-wood*, of which a certain quantity is carried to their shores by a current from the west; caused by winds which blow in those latitudes for six months in the year in a direction contrary to the Trades. The current is probably the northern limit of that shown in Johnston's Physical Atlas as "Mentor's Drift." It laps round Easter Island, and then joins the Chilean stream on its way to the Equator.

No tree was seen in 1868 upon the island the trunk of which was thicker than a man's thigh,—a dimension which would supply but little heart-wood. The historian of "Roggewin's voyages," 153 years ago, speaks of fruit trees being numerous, but does not specify their size; and Mr. Foster, the naturalist, who accompanied Capt. Cook, fifty years afterwards, alludes to shrubs only, at the most nine feet high. Yet there would appear to have been formerly larger trees, Mr. Palmer having met with old boles of considerable size in a state of decay. The tablets, therefore, may have been formed of wood grown in Easter Island, though it appears, so far as one can judge

* See Mr. Palmer's Narrative, "Ethnological Journal," vol. i (new series), p. 377.

from the appearance of the plaister casts, to have been used previously for some other purpose; as, for example, canoe planks, or the blades of paddles.

The two tablets are not of the same size. The smaller and more perfect one measures fourteen inches in length, by from $4\frac{3}{4}$ to 5 inches in breadth, and is about one inch thick. The corners are rounded and a good deal worn, and an indent or hollow exists on one face about $1\frac{1}{2}$ inches square. It is of some importance to observe that hieroglyphics are engraved in this hollow, in the same way as upon the plain surfaces. (Pl. xx.) The second and larger tablet is much twisted, and has been injured by fire in two places. It is 1 foot $6\frac{3}{4}$ inches long, by from $4\frac{1}{4}$ to 5 inches wide, and varies from half-an-inch to an inch in thickness. The sides are bevelled to a sharp edge in order, perhaps, to gain as much space as possible for hieroglyphics.

Eight lines of signs are engraved on each face of the smaller tablet, and twelve lines on the longer, but slightly narrower one. Between each row of signs there is a ridge caused by the union of flutes or sunken channels, and the hieroglyphics inscribed on these sunken channels are consequently protected from injury when the tablets are placed on a bench, or upon the ground. The width of the flutes, from ridge to ridge, in the smaller tablet, is seven-eighths of an inch; in the larger one, three-eighths of an inch. The signs engraved on the latter are consequently much smaller, and they are more delicately executed.

Before proceeding further into details, it will be well to point out some of the reasons which appear to me conclusive, that the tablets were not intended for stamping cloth. All the stamps of which there are specimens in our museums are in *relief*, and the patterns of great sameness. In the case of the Easter Island tablets, the signs are incised, and sunk, as above mentioned, in channels, so that impressions from them could not easily be made. Both faces of the tablets, also, as has been said, are covered with figures, as well as the bevelled edges and hollows, where no use could have been made of the patterns for stamping cloth.

Proceeding now to the description of the hieroglyphics; one of the first points which calls for attention is the singular arrangement, which renders it necessary for a reader to turn the tablets round, or change his position, at the end of every line, if the signs are read in regular order. This is owing to the lines of hieroglyphics being alternately *reversed*, a plan which appears to be unique.

Since, too, the signs in the top line of each tablet, on both faces, stand upside down (as shown by the position of the bird-headed men, etc.), it seems probable that the bottom line on

each tablet, where it will be seen the signs stand upright, is intended to be read first. However this may be, the bottom line in the smaller tablet, containing, as it does, a remarkable Procession, makes this a good starting point, even if it should prove eventually to be at the end instead of at the beginning of the story.

Holding, then, the smaller tablet with this Procession to the right of the reader, the indent already alluded to being immediately over the leading figure (see Plate xx), after reading the signs from right to left--this being the direction in which the heads of animals, as a rule, face the reader—it would be necessary to turn the tablet round at the end of this line, if the second from the bottom, where the signs are upside down, is read next in order. I propose, however, as it will save the necessity of turning the tablet at the end of every line, to read the *third* from the bottom after the first line, and so taking every alternate line up to the seventh, then turn the tablet once for all, and read the second, fourth, sixth, and eighth from the top in a similar way. This, I believe, will prove to be the easiest method, and serve a present purpose, even if, contrary to expectation, it should not be the one that is ultimately adopted.*

On a close examination of the casts, it appears evident that the tablets used not to be turned whilst held in the hand, otherwise the sides would have been worn as much as the ends, which is not the case. A tablet cannot easily be turned whilst held in the hand, unless one of the sides is grasped; but it may be turned without difficulty whilst lying on the ground, or on a raised bench, without touching the sides.

As regards the signs themselves, it is necessary to observe, first, that the figures, even in the tablet which contains but eight lines of hieroglyphics, are very minute;† they are less than three-quarters of an inch in length. It was impossible, then, for the native artist to give anything more than the general appearance of the objects delineated. The figures are, in fact, like things seen at a distance, which we recognise by their form, and not by the features, unless any chance to be unusually prominent: or, they are like shadow or outline drawings, in which, nevertheless, animals, and even different races

* The alternate reversion of the lines of hieroglyphics, as well as the ancient Greek method styled Boustrophedon, may possibly have been adopted to prevent the chance of missing a line, which sometimes happens in the case of indifferent scholars, when they have to carry their eye back to the opposite side of a page. It is easy, in the case of the tablets, to see by a glance at the position of the signs, which is the line to be read next in order.

† It will be found desirable to use a strong lens when reading the signs.

of men may be recognised, as, for example, in some of the smallest Egyptian hieroglyphics.

Though, however, we may feel perfectly sure that actual objects are represented on these tablets, it is difficult sometimes, at first, to recognise them, owing to the conventional way in which they are treated. Thus (it may be to economise space), fishes and canoes are set up vertically, and little or no difference is made in their size. So, too, the signs for turtles are placed upright, and are as large as men or trees. And in the case of the signs representing men, whether bird-headed or others, hands and feet are, as a rule, left out; as it would appear from the difficulty and trouble of engraving such small members when the figures themselves are less than an inch in height. But we find them introduced whenever it is desired to give expression to feelings and emotions, such as fear or astonishment.

Certain other conventional methods require to be explained; as, for instance, the elongation of one of the legs of a figure, where it is intended to represent motion, or speed in running: and the addition of a spear or dart to a sign; as, for example, when it is attached to a fish or turtle by a label, to signify that it has been killed or captured by spearing—though in other cases it may perhaps indicate the agent or captor.

After these preliminary remarks, I proceed to describe some of the more important groups or pictures in the smaller tablet, taking the signs in order from the right of the bottom line, and passing over the lines of reversed hieroglyphics as proposed in the early part of this communication.

Unfortunately, the first three signs in this line are almost obliterated, owing to the handling to which the wooden tablet has been, in the course of time, subjected. Comparing, however, the faint marks which are still visible, with more perfect signs in other places, there seems to have been on the right a column with two circles on each side of it probably, a "Sun-stone." Then two converging lines, perhaps to represent a canoe set on end, followed by a man with an Albatross' head (styled *Herronia* in Easter Island), who holds in his hand a baton or staff.* Another *Herronia* kneels behind with upraised hands; and a third follows in a standing attitude with the arms hanging down at his sides. Then there are two similar figures, and an animal (perhaps from its head and neck a fowl), conventionally treated,

* A staff from Easter Island was exhibited at the meeting. It is ornamented at the top with a bi-fronted head, having elongated ears. A staff of this kind is still used by the older men in this island as a mark of authority. It may be assumed that the staff represented in the tablets was ornamented in a similar way, but the carving was too small to be shown.

with a crest or comb on the head, and short wings, which appear in the hieroglyphic signs to be distinguished from arms by the containing lines meeting in a point, which is not so in the figures of men. The animal, whatever it is, is represented turning to the left, as if attempting to escape; it may be to symbolise that it was intended for sacrifice. Then follow in procession two more Herronias, in all respects like the third one. Then canoe lines as before, and another Herronia holding a staff, one of the legs being waived, as if injured (?) A seventh ends the Procession, preceded by similar canoe lines and a sign which is enigmatical, but which it has been suggested to me indicates the sea. Both the last figures have much flatter heads than the five in the first division of the Procession.

All seven Herronias are represented with extremely short legs in proportion to their bodies, and this is also a peculiarity in the wooden figures from Easter Island. The rest of the line is filled with hieroglyphics, amongst others a turtle with an arm attached to it, and a paddle with a circular top, of the exact form drawn by Kotzebue, as seen by him in Easter Island; but it is not, I believe, like any found there at the present time.

The next picture that I propose to describe is in the third line from the bottom. On the right there are three men with large balls, or projections, on each side the head. They are not in procession like the Albatross-headed men, but face the front—no doubt for the purpose of showing these projections, which could not be seen in profile. It can scarcely be doubted that the figures represent natives of the Pacific, who *greatly* enlarged the ear lobe. They are represented with shorter bodies, and better proportioned legs than the Albatross-headed men; and this is found to be the case wherever they appear in the tablets.

The third of the figures, from the right, is running or hastening towards four fishes of uniform shape, which, both from the form of the head and position of the fins, as well as from the regular order in which they follow each other, appear to be dolphins, floundering in shallow water. Separated from this group by a column, with three circles on each side, there is a figure, also with enlarged ears, armed with a club, of a form altogether different from any in Easter Island, but common in Fiji, and the Samoa-group. He is represented as running to attack a *snake* with a wide head, and a knob or knot at the end of its tail, very much as serpents are sometimes drawn on ancient monuments both of the old and new world.*



* The woodcut is taken from a rubbing of figures on the cast; slight flaws or imperfections in the plaister only being corrected.

It appears to be the *Enigrus*, which, I find from Mr. O'Shannessy, of the British Museum, is found in Fiji and some other islands of the West Pacific, though not a water snake. Its head is broad, and the mouth and throat highly distensible, and it is known to twist its taper tail into a knot. On the left is a figure like the last, also armed with a club, and running towards a bird with a large head and hooked beak, (which, since this communication was read, I conclude may be the *doden*).* Then follow various hieroglyphics, including a tortoise or amphibious turtle, with its head adorned with symbols like the figures above described, and which probably have some sacred meaning.

Proceeding to the fifth line; amongst various signs, most of which appear to represent forms of animal and vegetable life, a man with enlarged ear lobes is seen running with upraised arms, and hands spread out in terror or surprise at the sight of an encounter between an animal, which stands conventionally upright, and a snake, which has seized it by the head or neck. The animal that comes nearest to this sign in the Pacific, appears to me to be the civet. Adjoining it are three crescents.

In the next picture (which is also on the fifth line), a man with a decidedly prognathous face, is represented as falling backwards, whilst endeavouring to escape from some animal with a long neck, a portion of which is seen projecting from behind an Albatross-headed man, who *holds a dagger or knife in his hand*. At a short distance to the right, with what may be meant for some plant between them, adorned with sacred symbols (perhaps the signs of "Taboo"), there is another animal conventionally treated, also with a long neck, and a spear or dart attached to its body by a label. This sign may possibly be intended to represent the same creature that we have seen attacking the falling figure, but now retreating, owing to a wound received from the Herronia with the dagger.

In the seventh line are various hieroglyphics, some of which are similar to Egyptian signs, *e.g.*, eyes and eyebrows, and a rope with dots or pellets on one side of it. The principal incident in this line is a combat between two animals, one of which appears to me to be a civet, and the other a bird like that in the Procession. To the left there are signs which may very possibly represent an octopus, a ray, and the bird called a darter (*photus ankinga*). They frequent the coasts of Asia and the seas adjoining.

Having arrived at the end of this line, we now turn the

* A dodo was said, in the "Times," of last December, to have been caught in Samoa. A letter, subsequently, from Professor Owen explains that this must be a *doden*. I have substituted it for 'an albatross,' which the sign scarcely sufficiently resembles,

tablet round, and reading from the right of the second line from the top (the nearest in imaginary position to the one last read), we see a prognathous or dog-faced man squatting before what looks very much like two idols, one of which is represented as sitting with a small tree or branch in each hand, whilst the other stands beside it and holds one of the same signs.* A squatting figure, also with a prognathous face, appears to be making an offering. He is followed by a bird like a doden sedent. Another dog-faced man, holding a hand up to his head, sits immediately behind, and then a pelican holding a fish.

Several fishes of different forms, and various signs and hieroglyphics, follow, *e.g.*, a hatchet with an ornamented handle, and a club with a small knob at one extremity, and a star-shaped boss, like many in the Solomon Islands, at the other. A man with large ear ornaments, holding an *Herronia* by the hand, appears to be associated with them.

In the fourth line from the top, several figures with prognathous or dog-like faces and high bushy hair, are represented holding hands and dancing. Then, in the middle of the line are numerous fishes, in the midst of which are two signs, formed of straight lines like a pillar, to each of which an arm is attached; on the right, with outspread hands, is another dog-faced man. Then comes a woman of the same type, dancing and holding a fish, followed by five other women, also dancing, *viz.*, two couples holding hands, and one dancing by herself. A dog-faced man stands in the middle of the line with an instrument in the shape of a U,—perhaps the hieroglyphic for a fishing net. One of the fishes, the capture of which appears to be celebrated in this line of iconographs is distinguished from the rest by a peculiar arrangement of the fins, which is not met with amongst the deep-sea fish which frequent the Pacific near Easter Island. The *cheilodipterus truncatus*, however, of the Solomon Islands, has, I find from a drawing in the “Cruise of the Curaçoa,” precisely the arrangement of fins of which I was in search.

In the sixth line from the top is a sign which may be intended to represent the bread-fruit tree. Then two Albatrosses on each side of a column. Then, between two figures with prognathous faces (who each hold up an arm with the hand spread out), we see a sitting figure with enlarged ear lobes and both arms upraised. From the form of the body it may perhaps be intended for a woman. Then the sitting figure of a man, also with enlarged ear lobes; and next to him an *Herronia*, with a bow of Eastern type in one hand, and an arrow or dart in the other. His head looks to the right, but he appears as if about

* Or perhaps they are human arms.

to turn in the other direction to attack a creature like a pelican, conventionally treated, with which a woman with enlarged ears seems terrified. She sits with her arms raised. A dog-faced man with a spear attached to his foot is advancing from the left. Then follow several signs representing plants and animals, amongst others a tortoise or amphibious turtle, with a peculiar mark on its back; and a lobster. There is also a singular creature with a spear attached to it, and a bird very like a *penguin*, or *gorfou*.

The signs in the eighth or last line on this face of the tablet are unfortunately almost invisible in the photograph: I will therefore mention them all in the order in which they stand, describing the figures, as before, from the right, as follows:—

Two signs (worn and indistinct), like pillars; a fish; another fish; three indistinct signs; two crescents over a circle; a fish-hook (?) with a human head of a prognathous type; fruit or edible root (?); the same repeated; a compound sign of a type before considered as representing a plant or tree with a branch on one side and a sharp implement like a spear attached to it by a label on the other; two crescents over a circle; a ring or circle with flowing lines proceeding from it (like one in the adjoining or seventh line from the bottom); an instrument like a harpoon; a bird-headed man holding a tree or branch (?) with a spear (?) attached to it, in one hand, and some cutting instrument in the other; three crescents over a circle; a palm tree (?); a compound hieroglyphic representing an almond-shaped sign with an arm (?) projecting from one side, and another arm terminating with a circle or disc, on the other; two crescents above a circle; a pillar or trunk of a tree (?), with a prickly branch projecting from it on one side, and a spear, or some acute sign attached to it by a label, on the other; a spear-head (?), with indistinct signs on each side; a double fish-hook, armed with shark's teeth (?), with a ring at the end; a man with large ear lobes holding some pointed instrument in his hand; a bird-headed man holding a fish to which a spear is attached by a label, in his right hand a knife (?); and two remarkable signs to the left, near the end of the line. They represent two sitting figures, one smaller than the other, with hideous faces, and peculiar head-dresses. The larger one holds in its hands two clubs or sceptres; the arms of the other are hanging down. They appear to be idols (but may be figures representing Chiefs); in either case they are altogether unlike anything in the Pacific. I have an indistinct recollection of having met them in connection with some people in the "East."



Reversing the tablet; the signs in the two bottom lines and

also in nearly the whole of the two top lines, are found to be of much the same character as on the face already described.

Commencing, as before, on the right of the bottom line (Pl. xxi), we see two figures with enlarged ear-lobes, with arms upraised, and hands spread out as if astonished at the sight of some singular creatures near to them on either side. Two figures, also with enlarged ears, but standing up, appear to be punting themselves in coracles, or diminutive canoes, formed like crescents. Smaller fishes than any represented elsewhere are placed on each side. A sitting figure, nearly obliterated, owing to its position near the end of the tablet, is represented with upraised arms, and a remarkable ornament round the head.

Passing over the intermediate lines, for reasons which will be given presently, in the seventh line from the bottom (or second from the top), the greater part of the signs seem to relate to an accident which appears to have happened to a native. An arm is seen attached to the tail of six fishes. Between two of them a man with large ear-lobes is running with a club in his hand. Further on another with a prognathous face is represented in a falling or kneeling posture, *with only the stump of one arm*. He holds up the other as if calling for assistance; near him are two Herronias, one of them with a staff or spear; the other with his hand raised to his head, and with the sign of a staff standing before him. Further on there is another Herronia holding a fish by the neck.

A man with large ears and with a club in his hand appears to be running towards one of the fish, with the arm attached to it. It seems probable that the native represented with only one arm has been rescued from sharks by the man with the club, and that the six fishes indicate the number of sharks by which he was attacked. On the left there is a creature like a pelican conventionally treated.

In the four middle lines and in a portion of the second line from the top, the signs are arranged in compartments or paragraphs, each of which commences (*or ends*) with the sitting figure of a negrito holding a staff, at the right side of which there are generally five, but sometimes six, short marks or notches. There are in all thirty-one of these figures, and consequently the same number of compartments, containing from one to six signs. It seems probable that they are the names of chiefs, and that the signs are enigmatical. The whole of these signs will be described at the end of the paper.

There has been no time to examine the larger tablet, except in a cursory way. The signs engraved on it are, as has been already said, considerably smaller than in the tablet which has been just described, and the execution more delicate and clear. This would seem to indicate that it is of later date. And the

repetition of signs seems suggestive of a subsequent adoption of Polynesian words. It may, by-and-bye, supply a key to the hieroglyphics which I have not attempted to decipher.

As regards the meaning of the iconographic signs and pictures, sufficient evidence has perhaps been adduced that they represent, as suggested in the early part of this communication, forms of life as well as weapons, and incidents (some apparently religious) which belong to islands many thousand miles to the west. In Easter Island, it is well ascertained that the only quadruped is a rat, and the only land bird a domestic fowl; and the natives have certainly neither dog-faces nor negrito-like heads.

When the traditions of the Island, assisted and kept up, as they would have been by these inscribed tablets, and other monuments, state that a chief arrived many ages ago from Oparo or Rapaiti, with many followers, and that they had been driven away from that island by force, it seems probable that the Heronias represented on the tablets represent those exiles. Assuming this to be so, the peculiarities noticeable in the ethnography of Easter Island, which were probably introduced by them, may assist us by-and-bye in gaining an approximate idea of the date of this most interesting but involuntary voyage.

At Oparo, we learn from a drawing by Captain Vine Hall, there is a temple or castle in five stages, surrounded by walls which enclose early stone houses. There are also platforms of squared stone on the side of one of the hills, which appear, like those in Easter Island, to be intended for statues. The natives of Oparo, according to their own traditions, in former times were in a state of constant warfare, though their island is not more than twenty miles round. If the occupants of the castle were the people with whom they fought this would be accounted for, as it may be assumed that they were strangers who had been carried to the island by currents or gales. If forced to take to their boats they would have drifted almost as a physical necessity to Easter Island. Two nationalities may, however, have arrived together at Oparo, and in course of time quarrelled. Those found on the Island, when re-discovered, appear to have been good sailors, and a very tall race like the people of Tonga.

The signs which it has been thought probable form the names of chiefs or kings, commence near the end of the second line from the top of the reverse face of the tablet. There are thirty-one paragraphs.

I. Sitting figure with staff. 1. Fish. 2. Three small circles. 3. Shell? 4. Hatchet ornamented. 5. Tree? Sugar-cane?

II. Sitting figure with staff. Three signs much worn owing to their being at the end of the tablet.

In the fourth line,—

III. Sitting figure with staff. 1. Turtle. 2. Tree, with

branch? 3. Staff or pillar. 4. Large turtle. 5. Hatchet (personified). 6. Staff or pillar. 7. Large turtle.

IV. Sitting figure with staff. 1. Staff or pillar. 2. Fish. 3. Staff or pillar. 4. Rapa.

V. Sitting figure with staff. 1. Various hatches, with chevron above. 2. Turtle. 3. Three small circles. 4. Turtle. 5. Sign like *e* (italic.) 6. Large-eared figure, clothed? holding an enigmatic sign, with three arches attached.

VI. Sitting figure with staff, preceded by five chevrons. 1. Albatross (or *doden*?) 2. Dog-faced man holding turtle. 3. Shield or gorget? 4. Pillars, with three arches or half circles attached. 5. Large-eared figure holding up his arms, with some signs attached to one of them.

VII. Sitting figure with staff; and three signs which are almost entirely obliterated near the end of the line.

In the sixth line from the top,—

VIII. Sitting figure with staff. 1. Shark. 2. Fish-hook?

IX. Sitting figure with staff. 1. Man with mask? holding some unknown instrument in his hand.

X. Sitting figure with staff. I. Two Herronias embracing. 2. Three small circles.

XI. Sitting figure with staff. 1. Fish, with label attached, and two chevrons above. 2. Fish-hook? 3. Beetle or some other insect. 4. Turtle laying eggs. 5. Figure with mask or high cranium and with *no* signs to indicate large ears; he holds a staff *with* large ears at the top, like those in Easter Island, and raises the other arm.

XII. Sitting figure with staff. 1. Herronia. 2. Figure, with *one* large ear? holding a club in his hand, with one leg injured? 3. Herronia, with a club in his hand, and a spear? attached to the same arm that holds the club.

XIII. Sitting figure with staff. 1. Hieroglyphic like the body of some animal with two chevrons in place of a head. 2. Cock crowing? 3. Bird with tuft or crest on its head. 4. Man with *two* pelicans' heads (a Janus figure?).

Here the tablet is to be turned. In the third line from the bottom,—

XIV. Sitting figure with staff. 1. Imperfect figure, apparently of a man with his arms raised. 2. Canoe sign?

XV. Sitting figure with staff. 1. One fish attacking another. 2. Figure with large ears, clothed? and holding a staff.

XVI. Sitting figure with staff. 1. Two fishes, one above the other. 2. Pillar.

XVII. Sitting figure with staff. Albatross (or *doden*?).

XVIII. Sitting figure with staff. 1. Sitting or kneeling figure with large ears, and uplifted arms.

XIX. Sitting figure with staff. 1. Dog-faced figure or negrito, with stump of an arm. 2. Herronia, with some weapon or instrument in his hand. 3. Staff or pillar. 4. Plant? Club?

XX. Sitting figure with staff. Two dog-faced figures or negritos sitting back to back, each with only one arm; one of them holds his hand to his face, or beckons.

XXI. Sitting figure with staff. 1. Staff or pillar. 2. Pelican. 3. Beetle.

XXII. Sitting figure with staff. 1. Hatchet with ornamented handle. 2. Staff or pillar. 3. Fruit tree?

In the fifth line from the bottom,—

XXIII. Sitting figure with staff. 1. An insect. 2. Staff or pillar. 3. A cone? a shell? or fruit?

XXIV. Sitting figure with staff. 1. Double-headed pelican. 2. Four diamonds or small circles united.

XXV. Sitting figure with staff. 1. A compound hieroglyphical sign. 3. A shield or gorget? 4. Herronia with club.

XXVI. Sitting figure with staff. 1. Dog-faced man or negrito dancing with a club in his hand; he raises the other.

XXVII. Sitting figure with staff. 1. Staff or pillar. 2. A plant or club?

XXVIII. Sitting figure with staff. Dog-faced man or negrito, holding a club in one hand and raising the other.

XXIX. Sitting figure with staff. 1. Several small circles or dots. 2. Pillar or tree? with arm.

XXX. Sitting figure with staff. Pillar or tree? with arm and hand: a second sign like a sword or knife is attached to the arm.

XXXI. Sitting figure with staff. 1. Staff or pillar. 2. Infant with enlarged ears? 3. Figure with large ears.

DISCUSSION.

Señor GONZALEZ DE LA ROSA said, the MS. which I here exhibit in illustration of Mr. Harrison's paper, contains some relations of expeditions made to the Pacific Islands by order of the Viceroy of Peru, from 1770 to 1774, but only the last eight pages are relating to the Easter Island. The voyage was undertaken in 1770 by Captain Don Phelipe Gonzalez, S.N., with two war ships, S. Lorenzo, and Sa. Rosalia. The 15th November they took possession of the Island on behalf of H. C. M. Carlos III, and for that reason, the MS. said, they gave to the Island the name of *S. Carlos* instead of *Davil*, as it was formerly called. On that occasion, after the deed of possession had been signed by all the expeditioners, they invited the *Caciques* to do the same, as a act of donation to the King of Spain. Then the chiefs drew the characters contained in the MS., the correctness and authenticity of which is testified by S. Antonio Romero, the secretary of the expedition. The striking

likeness of the characters with those of the inscriptions described by Mr. Harrison is worth consideration. It seems evident that the signs of the inscriptions might be old, but on the other hand they might be of a recent date, since we see in the native writing nearly the same characters. That proves that the existing race of Easter Island have the use of hieroglyphic writing, and that by intercourse with the present population it would be possible to discover the secret of deciphering the old inscriptions. Great light on this and other ethnological questions could be obtained if an accurate survey of the Easter Island were made. The MS. also contains a curious map of the Island, with soundings, and the following description of the inhabitants: "The number of natives seems to be about 1,200; they are amiable and did not bear any weapons when they came to us; the men are tall, strong and well constituted, of great vivacity and agility; the women are few and generally short; all are of a dark colour, but not at all black, and their figure is well formed; the pronunciation is easy, because they used to repeat without difficulty all that we said: in spite of that we were unable to understand their language."

Mr. HARRISON in reply, said the interesting discovery by Señor de la Rosa of the signature by Easter Islanders one hundred years ago to a treaty with the Spanish Admiral Gonzalez, shows that some traces of the custom of using hieroglyphics existed at that date. The sign of a sitting figure, as I have pointed out, occurs in connection with signs which there is reason to believe represent names. The signature by the chief on the above-mentioned occasion may merely show that he drew the sign of an Herronia—the only sign in the deed like any of those in the tablets—to indicate he was a chief. It is well known that the islanders keep up, or did so until a not very distant period, the art of drawing, as is shown by the pictures of ships in full sail on the walls of some of the houses.

Professor T. McKenny Hughes read the following papers:

EXPLORATION of CAVE HA, near GIGGLESWICK, SETTLE, YORKSHIRE. By T. McKENNY HUGHES. [With Plate xxii].

IMMEDIATELY above the talus which slopes up to the limestone cliffs on the north side of the road between Austwick and Giggleswick, a fine half-dome shaped cave can be seen from the road as it rises the hill beyond Crow Nest. It is a locality well known in the district, not only for its beauty, but also as the haunt of the boggart of Cave Ha.

The origin of the name "Cave Ha" is not clear, as it appears sometimes to be applied to the cave and sometimes to the hill. In the dialect of the country it might be the Cave Haw or Hill, or it might mean Cave Hall, in allusion to the roofed chamber of the cave,* or, less likely, it might be derived from Cave Hole.

* Hall is always called Ha in that district.

Such a spot might naturally be expected to have been sought for shelter by primæval man as well as by the wandering gypsies and tinkers of later times. Indeed, I was informed that quite recently an eccentric individual lurked about the rocks of Cave Ha Wood undiscovered for months, living on milk which he obtained from the cows on the neighbouring farms at night, and on other produce which he could easily pick up.

I therefore thought it worth while to explore the cave, and by the kind permission of Mrs. Ingleby, of Crow Nest, I dug through the deposits which form the floor, following one wall of the cave to the end, leaving the rest undisturbed in case further evidence should be required with regard to any particular bed. I was assisted in my search by Mr. Tiddeman, Mr. Arthur Lyell, and Mr. Adam Sedgwick, and obtained some interesting results.

The cave or rock shelter, as now seen, is in form somewhat like half a bell. [See sections 1 and 2.] There is a funnel-shaped hollow (e) in the roof, which suggests that the water rushed down from a swallow hole above through this funnel into a chamber which was rounded by the eddying water and pebbles. Denudation then cut back the rock from the great fault which runs below the limestone cliff nearly along the road, and when finally the south side of the chamber was broken off the cave was laid bare much as it is.

The height of the cave from floor to roof is about thirty-five feet, and the funnel is seen to run up about twenty feet more. The floor extends about forty feet from front to back, and about fifty feet from side to side.

The deposits are in descending order :—

A. (1.) Surface mould, with pellets of owls, kestrels, etc., to one foot passing down into

(2.) Earth with much vegetable matter; old floors, with remains of plants, charred wood, pottery of modern and ancient make, antique knives, ox shoe, stone bead, flint flakes and bones of recent animals, all mixed up together by burrowing animals; large numbers of bones of mice in places; two to four feet.

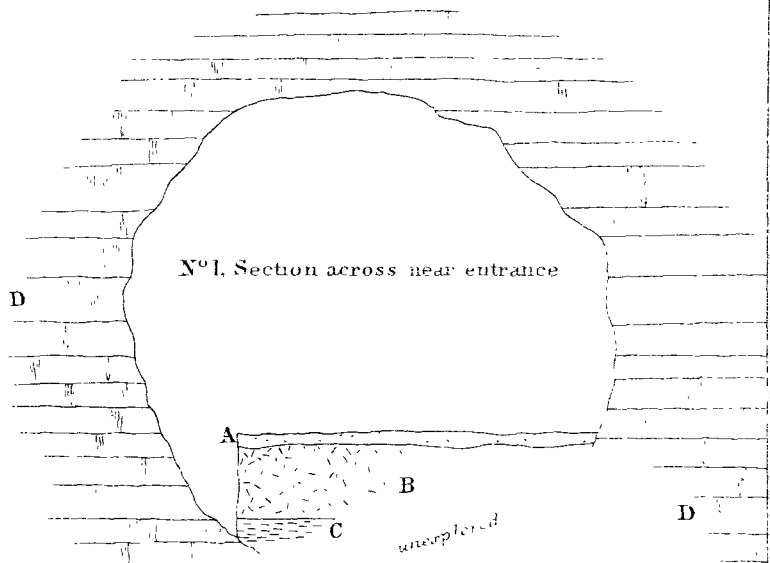
B. (1.) Decomposed powdery travertine and limestone to two feet.

(2.) Fragments of limestone, sometimes cemented into a breccia. Hardly any traces of vegetable mould; comparatively few bones, except those of mice, which are crowded into all the interstices of some portions of the bed.

C. Yellow clayey sand and clay, perhaps in a great measure the insoluble residuum of the dissolved limestone; no bones or other remains were found in this bed.

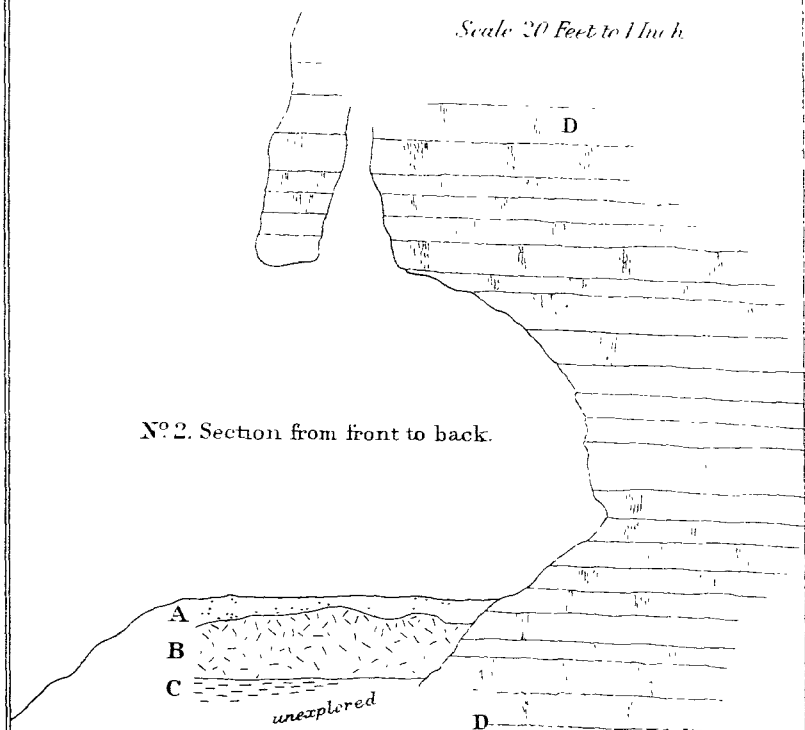
D. Mountain Limestone.

CAVE HA.



Scale 20 Feet to 1 Inch

N°2. Section from front to back.



The bones have been examined by Prof. Busk, in (A) he finds only the remains of recent species. He has determined the following:—Wild goose? small species of duck, small bird, ox, sheep, goat, deer, pig, badger, hare, rabbit, mice, fox, dog, fish (ear bone.)

With these, however, were associated an irregular jumble of ancient and modern works of art, among them more or less dressed flakes of chert and flint. Chert is a material abundant in the district, but flint is very scarce, being only rarely found in some gravels.

There is among the stone relics a curious thing like a flat bead or ring, such as might have been used as an ornament. The pottery is very fragmentary, and though some of it much resembles pottery known to be of neolithic age, still, as it has got mixed up by the operations of rabbits and badgers with other fragments undoubtedly quite modern, the evidence is not satisfactory. There are also some curved iron implements, probably knives of an old fashion; one ox shoe and fragments of bone which may have been turned to account for various purposes.

On the whole these remains do not point to any remote antiquity, and if the pieces of flint and chert may have been used for striking a light, either in the hand or on a gun or pistol, they also may be very recent.

In (B) there were comparatively few bones except those of mice, which in places crowded the interstices between the fragments of limestone.

Prof. Busk has detected, among the bones of larger animals, remains of ox, goat or sheep, hare, dog, and one molar of bear.

No flakes or other traces of man have turned up in this bed, although the above list would lead us to assign no great antiquity to it.

Cave Ha explains one point of considerable interest, that is, the manner of occurrence in some cave deposits of immense quantities of the bones of various species of mice. We find on the surface in Cave Ha, a layer made up of the undecomposed pellets of owls. Some, it is true, are broken up, and the hairs and bones of the mice are strewn over the cave, getting in between any fragment of stone which may have fallen on the floor, other pellets get covered up while still unbroken, and explain those curious little bunches of bones which we find in the beds below, and in which the grouping of the bones is exactly similar to that in the undecomposed pellets above.

Dr. Lund, as quoted by M. Steenstrup,* from a comparison of

* Videnskabelige Meddelelser fra den Naturh. Forening i Kjøbenhavn, 1872.

the mode of fracture of the bones of small animals found in some Brazilian caves, with those in the pellets of the owls which now inhabit them, has inferred that they were chiefly brought there by owls, and upon that hypothesis founds an ingenious calculation as to the antiquity of the existing fauna of the country. M. Steenstrup pointed out that the action of the gastric juices produces marks on the bones of animals by which those that have been in the stomachs of birds of prey may be easily recognised, but seems to question the value of the evidence founded upon the mode of fracture only. I am unable to offer any further evidence on these points, as we ought to show not only that the state of the bones in the cave is similar to that of the bones in the pellets, but also that the character of the fracture and decomposition of the surface is different from that which would be produced by the ordinary weathering of the bones. However, the manner of occurrence and grouping of the bones, which in Cave Ha we can trace up to the undecomposed pellets, renders it certain that in that case they are almost all to be referred to owls, which I have frequently seen both there and far in the gloom of other limestone caves of the district.

In Cave Ha, which is light and open, we find traces of kestrels as well as owls. Birds of prey frequently return to the same rock to devour and rest after swallowing their prey. Many omnivorous rodents, such as rats and mice, and some insectivora, such as hedgehogs, carry off into their holes bones and other refuse which require time to pick.

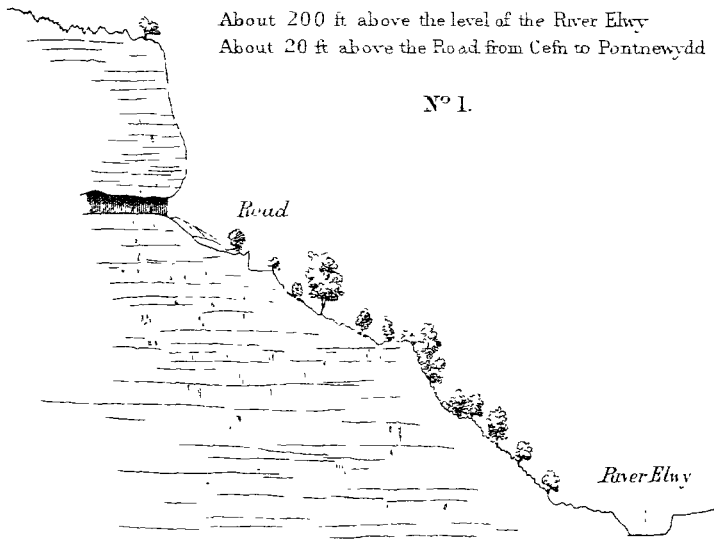
Such considerations offer a simple explanation of the manner of occurrence of numerous bones of small animals associated with some of larger kind in limestone fissures, especially those which occur along ridges. Collected by birds of prey, and perhaps some by man, they are dragged into their little dens by our small scavengers far beyond where they would be carried by man, or even by foxes or cats, while in heavy rains they are swept on into the deeper cracks which drain the rock. Sometimes the whole of such collections have been too hastily referred to the agency of man, especially if his long sojourn in the neighbourhood be well established on other evidence, and his remains found in adjoining caves.

I think I can also suggest an explanation of the superstition of the *Boggart of Cave Ha*. One day when I was at the bottom of the trench examining the earth as it was being thrown out by the workman, I heard a curious laughing voice close behind me. He also heard it, but it did not appear to him to come from exactly the same spot as that from which I thought it came. We went out and saw some boys laughing and playing far down the road. Owing to the peculiar

POSITION OF PONTNEWYDD CAVE, CEFN, ST ASAPH.

About 200 ft. above the level of the River Elwy
About 20 ft. above the Road from Cefn to Pontnewydd

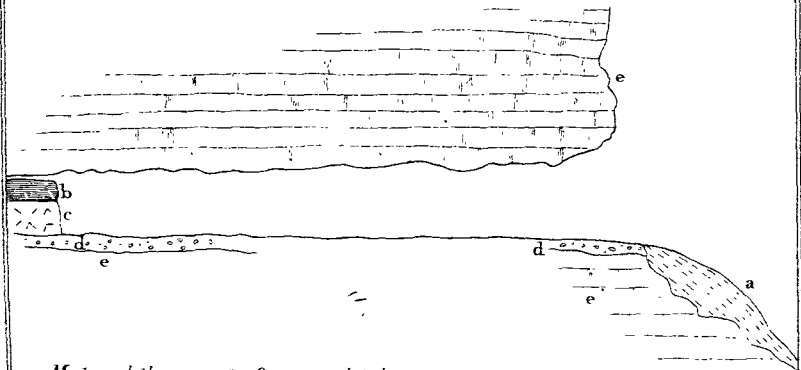
Nº 1.



PONTNEWYDD CAVE, CEFN, ST ASAPH

Scale 20 Feet to 1 Inch.

Nº 2.



- a. Material thrown out of cave and talus
- b. Yellow cave earth, about 3 ft. seen in section at the end, evidence that it was near roof all along, lines of black oxide of iron at base
- c. Breccia of clay with angular fragments of limestone few Silurian &c washed in
- d. Gravel almost all rolled Silurian, felsstone &c such as might be derived from Boulder Clay
- e. Mountain limestone.

form of the cave, their voices seemed to have been collected in an irregular manner into foci, somewhere near where we were standing. I frequently heard the same effects again. Such sounds, heard by early hunters or modern poachers hiding there at night, might easily suggest the ill-defined *Boggart*, which timid people would afterwards see in the gnarled stem of a broken tree or the fitful phosphorescence of some low forms of vegetable life.

The remains which I have found will be placed in the Museum of Giggleswick Grammar School, where so many cave treasures are already lodged. There are indications of caves about fifty yards east of Cave Ha, but the labour of opening them would be considerable at first, as very large blocks have fallen over the mouth.

On the OCCURRENCE of FELSTONE IMPLEMENTS of the LE MOUSTIER TYPE in PONTNEWYDD CAVE, near CEFN, ST. ASAPH. [With Plate xxiii]. By T. McK. HUGHES, M.A., Woodwardian Professor of Geology, Cambridge, and Rev. D. R. THOMAS, M.A., Vicar of Cefn. With a note on the bones by the President.

THIS cave was partly excavated by Mr. Williams Wynn some years ago. Referring to the section I, it will be seen that the cave occurs in the face of a limestone cliff, about 200 feet above the river Elwy. It is further up the river, and at a considerably higher elevation than the celebrated Cefn cave. Referring to Section II.—

a. Material thrown out of the cave.

b. Yellow cave loam, probably the earthy residuum of decomposed limestone with the addition of some clay washed in through cracks and holes. It is rarely laminated, because there could seldom have been in this particular case a sufficient depth of muddy water ponded back to admit of the sorting of particles of various size and weight during tranquil deposition. This deposit seems to belong to the time when the cave was being filled up, so as to be almost cut off from the outside frost and rain. It may be well examined in a clear vertical section left at the far end, where it is seen to be about three feet thick. At the base there are often lines of black oxide of iron.

c. Breccia, consisting chiefly of angular fragments of limestone, with some pieces of pebbles of Silurian and Cambrian rocks, such as might be derived from the drift outside. About three or four feet of this also is seen in the section at the end

of the cave. It probably belongs to the time when the roof was crumbling down by the action of the frost, and occasional floods carried in the débris from undermined cliffs of boulder clay, which once existed all over the district.

d. Gravel of rolled fragments, chiefly of Silurian and Cambrian rocks, sometimes cemented into a conglomerate. This is just what would be produced by washing the boulder clay of the neighbourhood, which is chiefly derived from the Snowdonian and intervening districts, some of the stones being large. About two feet of this gravel has been dug through near the end of the cave, and it has been trenched through to the same depth for about ten yards from the mouth. It belongs to the early history of the cave, when it was the underground course draining off the water which accumulated over large tracts of boulder clay, and at length plunged into swallow holes on reaching the limestone. When this boulder clay had been eaten back far enough to turn the water into other swallow holes, feeding other or probably lower caves, then the formation of the bed (c) commenced in the Pontnewydd cave.

The cave loam (b) and the breccia (c) have been almost entirely removed for about twenty-five yards. Patches of the breccia remain in corners, or where cemented by the calcareous drip, and here and there a stalactite opening at its lower end like a huge sea anemone discloses some of the cave mud, which must have been so near the roof that the stalactite touched it, and was beginning to spread out over it into a stalagmitic floor. When examining the débris thrown out of the cave, we found among the fragments of feltstone some which must have been reduced to their present form, since they were transported by water, or had lain in the drift, as they were not rounded, nor was the surface weathered as in the case of the majority of stones in the cave deposits and in the drift. And to one familiar with the Le Moustier types there was something very suspicious in one or two of the forms first found. Further investigation and a comparison of the forms found at Pontnewydd with the few Dordogne and St. Acheul specimens at hand, has furnished us with so much cumulative evidence in favour of the artificial origin of the felstone flakes and discoidal fragments that we have thought it worth while to bring the matter before this society.

First, we may notice, with regard to the material, it is a compact grey felstone sometimes porphyritic. It does not occur *in situ* in the drainage basin of the Elwy, but is common in the drift of the neighbourhood. Even in a highly-finished implement this rock does not show the care bestowed upon it in the same way that flint does.

The period to which they may probably be referred was one in which very rude implements were in use. It is equally good evidence of the agency of man, if we find even natural forms which might be made of use in a situation to which they could only have been brought by the hand of man, *e. g.*, in some of the Dordogne caves there are very rude forms of flint, so rude that if we found many of them on the surface of the country we should think it possible they were quite natural; but they are found in caves, in such condition, in such positions, and so associated, that they cannot have been introduced there by any known operation of nature.

It is a curious circumstance with regard to these early implements that we find a great uniformity of type in widely separated districts among the implements which the rest of the evidence would refer to the same period. So when we come to compare the Pontnewydd forms with the palæolithic forms from France. Even allowing for the difference of material to which we have already called attention, it would be difficult in some of the instances before us to make a drawing by which, after looking at the Pontnewydd and at the French specimens, we could say which was meant. The similarity of position of the bulb of percussion in one case, and of the small portion of the original weathered surface remaining in another, are accidental resemblances more curious than important.

The implements we have as yet found may be grouped under four principal heads, to illustrate which we have selected those we could find most like them in a small collection from Dordogne and St. Acheul.

1st. The Discoidal. Of this we have only one specimen; but that is exactly like the specimen exhibited from St. Acheul and Le Moustier.

2nd. The pointed or straight-fronted scraper—flat on one side, dressed more or less on the other. These are as usual made out of large flakes, and the great bulb of percussion is seen in both the specimens from Pontnewydd.

3rd. The Arrowhead. We should not show these alone, but having many similar forms as rude from the Dordogne district, and having found them with the other better forms described above, we have thought it worth while to exhibit them also. The rude tang got more and more finished in later times. Individually they look as if they might have been formed by nature, yet it would be curious to find several of them together were they not selected by man as useful, and carried there.

4th. The three-pointed form, of which there is one fair and one rough specimen. These also somewhat resemble common Le Moustier flints.

From the position in which our specimens were found it would appear that they occurred in the deposit (c). One was picked up in the cave under circumstances which rendered it almost certain it was derived from it.

Professor Busk has kindly examined the bones found with the felstone and flint implements, and written the following note upon them :—

“I have looked over the collection of bones and teeth from Pontnewydd cave, and find they belong to *Hyæna spelæa*, *Ursus spelæus*, *U. ferox*, *Equus caballus*, *Rhinoceros hemitæchus*, *Cervus elaphus*, *C. capriolus*, *Canis lupus*, *C. vulpes*, *Meles taxus*, *Homo sapiens*, besides indeterminable or not easily determinable splinters many of which appear to be gnawed by hyæna or wolf. Some are rather less infiltrated with manganese than the others, but all appear to be pretty nearly of the same antiquity, not excepting the human molar tooth, which looks quite as ancient as the rest. It is of very large size, and in this respect exceeds any with which I have compared it, except one or two from Australia or Tasmania.”

On the whole, therefore, it would appear that we have fragments of the toughest stone of a country where suitable flint could not be procured, shaped like some of the undoubted flint implements of the caves of Dordogne, occurring in a cave associated with the same group of animals as that found with the French implements; that these instruments are formed of fragments of felstone such as is abundant in the drift of the neighbourhood and in the cave deposits. A portion of the original surface left on some of the implements shows that they were formed out of such weathered fragments. Unless, therefore, the fragments from which the implements were formed were brought by man from another and distant river basin, they must have been obtained from the drift, and this is rendered almost certain by their being found associated with remanié drift mixed with tumble from the roof of the cave. Therefore they must belong to a period later than the glacial dispersion of the Snowdonian drift. Flint flakes and scrapers have been found in the cave; but though it is most probable that some of them were derived from the same bed as the bones and felstone implements, the evidence for their position was not quite satisfactory, and therefore we say no more about them.

Pieces of undressed flint certainly occur in the older beds (c), which would make it at any rate of not earlier date than the St. Asaph drift, which contains only recent nonarctic shells.

DISCUSSION.

MR. JOSEPH NELSON said, being only a visitor I must beg that you

will kindly permit me the privilege of saying a few words on the subject of the Ha Cave. I was born almost in sight of it, passed it night and morning for many years on my way to and from Giggleswick School, and have played in and about it when a boy hundreds of times. It was then known as "Jack Daw Hole," I have, however, heard it called the laughing cave. There is a beautiful echo, when sounded about half way towards the turnpike road, and as boys we used to amuse ourselves by hearing our laugh repeated, Ha, Ha, Ha ! At first I thought it not improbable that the cave might have derived its name from this source, but when I remember that it is situated near Buck Ha Brow, the name of that part of the road extending from the "Ebbing Flowing Well" to near Crows Nest, the name is most probably derived from the name of the brow. The place and all its surroundings has always had a very bad reputation, it was infested with gypsies. A turn in the road close by is called "Dangerous Corner," many accidents have occurred there, coaches and waggon's upset and passengers and horses killed, a dear friend of my father was killed immediately opposite the cave, a horrible murder was also committed a few yards west of it, a notorious family of the name of Lambert, who resided at "Brunton House," robbed a cattle-dealer, and then threw him from the top of the Scar, a height of between two hundred and three hundred feet ; his body is said to have struck against the face of the rock and left an indelible impression of his blood ; a fact implicitly believed by me and all my schoolfellows, inasmuch as the large brown mark is plainly visible on the face of the rock, and we have all seen it. At the time I am speaking of (nearly fifty years ago) fairies, witches, and wise men were extensively believed in in this part of the country, and it was in connection with this cave that I was first initiated into the secrets of the fairies by an old servant of my father. Referring to the sketch of the cave exhibited by Professor Hughes, it will be seen that there is a large opening at the crown of the arch, in early days it was believed that this led to an inner cave of immense size, but from the peculiar position of the opening was not accessible by that route, and therefore some enthusiastic believer had made an attempt to effect an opening by driving a level from about the middle of a natural staircase which runs up the face of the rock about ten yards east of the cave. The old servant proposed that he and I should continue this level until it opened into the cave, and there take up our residence with the fairies, and sally forth with them on their nocturnal journeys. In fact the matter was looked upon in so serious a light by me that I provided myself with a hammer, a pick, and a cold chisel, and I worked many a lonely hour at the tunnel ; the material, however, was not so soft as myself, and I at last abandoned it, but I did so very reluctantly. It would afford me great pleasure to accompany Professor Hughes on his next visit to Giggleswick, for I can show him a cave known only now (I think) to myself. When I was a boy it was said to be remarkably rich in fossil remains, to have been explored only by one man, and that he had gone so far that he could hear the sound of the fire-irons on the hearth at Stack House. Thanking

you for the kind manner in which you have listened to my remarks, I much regret that I was not educated in geology and anthropology, instead of fairies, and wizards, and witches. I had, however, a rude induction into the science of anthropology the first day I went to Giggleswick School, by one of the boys seizing my hat and running with it to the bone-house of the neighbouring churchyard; in a short time my hat appeared on the wall, when on taking it up I found it contained a human skull, this so shocked me that I did not care at that time to pursue the investigation of anthropology.

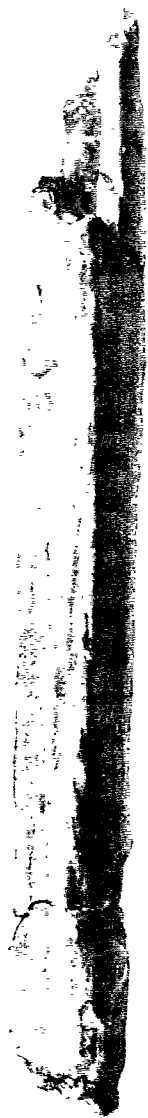
Prof. HUGHES said that he had selected the forms from St. Acheul for comparison, not as typical specimens from the Somme Valley, but just to show that while he could find counterparts of all the Pontnewydd forms in the cave of Le Moustier, some of them were to be found also in the gravel of St. Acheul, thus grouping the Pontnewydd specimens with the oldest of the Dordogne types.

Mr. FRANKS, Dr. KING, and Mr. CHARLESWORTH also joined in the discussion.

The President read the following paper:

NOTICE of a HUMAN FIBULA of UNUSUAL FORM, *discovered in the VICTORIA CAVE, near SETTLE, in YORKSHIRE.* By G. BUSK, F.R.S., President of the Anthropological Institute.

THE fragment of bone I am about to describe was discovered in May, 1872, at the Victoria cave, near Settle, in Yorkshire. It lay at a considerable depth in the cave earth, and beneath a thin layer of "boulder clay," which was again covered by a thick deposit of more recent materials, and accompanied with the bones of the two larger species of Cave Bears, Hyena, *Rhinoceros tichorinus*, Bison and *Cervus elaphus*. From its position, accompaniments, and other considerations, the deposit in which the specimen was found has been regarded, and it seems with great probability, as of preglacial age—that is to say, of an age anterior to the period at which the surrounding country, and the greater part of the island in fact, was covered, as is Greenland at the present day, with a thick sheet of ice. Into this part of the question, however, it is not my intention, nor in fact would it be in my power, to enter on the present occasion, although I hope it will afford a subject for interesting discussion at a future meeting of the institute at which Professor Boyd Dawkins and Mr. Tiddeman, and I should hope Professor Hughes and other experienced antrologists, may take part. One thing may, nevertheless, be remarked, that there is nothing in the condition of



the bone opposed to its belonging to the most remote antiquity, nor to its owner having been coeval with the extinct mammalia mentioned above, with whose remains the specimen, as to condition, differs in no appreciable respect. Its interest, therefore, as in all probability representing one of the earliest extant specimens of humanity, will be at once obvious. But in another regard also it appears desirable that some notice of it should be placed on record. The very unusual form and thickness of the bone have caused such great difficulty in its recognition as human that it is well worth while to draw attention to its peculiarities.

The whole collection of animal remains, soon after their discovery, was sent to me for identification, and at that time I was greatly puzzled with the present specimen, which I was unable to refer certainly to any of the other species I have enumerated, nor without extreme doubt to any other. Finally, however, I was induced to think that it might be elephantine. The supposition of its being so was suggested to me by Mr. James Flower, the well known and experienced articulator to the Royal College of Surgeons, who, upon comparison of the fragment with the fibula of the elephant, perceived, as he thought, strong grounds for supposing that the Victoria cave bone might be referred to a small form of elephant. Considerable doubt, however, remained on our minds, and when I saw the Mentone skeleton at Paris, and noticed the thick and clumsy fibula belonging to it, I was at once struck with the apparent resemblance between it and the cave bone.

I had no direct means of comparison between the two, and the matter might still perhaps have been in abeyance had not Mr. James Flower, at my further instance, been fortunate enough to discover amongst the numerous human bones in the museum a recent fibula, which at once removed all doubt.

The extreme diversity in form and thickness of the human fibula is well known, but the present case affords an instance of greater divergence from the more usual form and proportions than any I have before chanced to meet with, for which reason I have given a figure of the part corresponding to the cave fragment for the sake of comparison. (Pl. xxiv, fig. 3.)

The fragment is about six inches long, and consists of the shaft of the bone from a little above the middle to the point at which the anterior angle divides into the two ridges going to either side of the *malleolus*, or to about three inches above the distal end of the bone. The bone, therefore, when entire, was perhaps about fifteen inches long, and its circumference about the middle is 2.2; that of the fibula with which I am comparing it, and which is the thickest recent one I have been

able to meet with, is 2."0. The usual circumference of the full-sized human fibula, leaving out cases where the ridges, or some of them, are unusually prominent, may be taken at from 1."4 to 1."8. It is obvious, therefore, that the cave specimen is unusually thick. In other respects its chief peculiarity is the comparative obtuseness of the anterior angle and the very slight hollowing of the internal and posterior surfaces. The posterior angle, on the other hand, is unusually acute and prominent. There is, I may observe, no indication whatever that the bone has suffered from any morbid affection, rachitic or other, as it appears in all respects perfectly healthy and natural.

In general condition the substance is dense and heavy, although the surface is marked with numerous fine longitudinal cracks, which may be taken to indicate exposure to subaërial influences previous to its inhumation. The surface is almost entirely covered with a very thin layer of crystalline stalagmite, which may also be observed on the fractured surfaces. It will be noticed that a small portion has been broken off at each end.

But the surfaces of these fractures, when examined, are also found to be encrusted with carbonate of lime, so that it is probable that the fragment was broken as we see it after its lodgment in the cave earth, and, may be, by the falling of a piece of rock upon it. It is otherwise difficult to understand how such small fragments should have been found in close contiguity, as I believe they were. It may be stated that there are no recognisable marks of gnawing on any part of the bone.

I would remark that, to judge from the form of the bone, it does not appear probable that the corresponding tibia was platy-nemic. But this is a point which it would be very interesting to ascertain, and it is to be hoped that in the further exploration of the Victoria cave not only the tibia, but the skull and other parts of the skeleton of preglacial man will be met with. None of his works have, I believe, been as yet discovered in the same deposit, and should they be met with they will doubtless be of the rudest kind.

In conclusion, I have to thank the Committee for the exploration of the Victoria cave, for their kindness in giving me this opportunity of bringing before your notice such a very interesting specimen, and Mr. G. Style, of Giggleswick, by whom it was forwarded to me.

DISCUSSION.

Prof. HUGHES said that having already, at the British Association meeting at Brighton and elsewhere, given his reasons for believing that the evidence for the preglacial age of the deposits hitherto discovered

in Victoria Cave was inconclusive, he would not reopen the question further than to state that he had not, after many subsequent examinations, seen any reason to alter his opinion on that point.

Mr. WALTER MORRISON offered a few remarks and the meeting separated.

DECEMBER 30TH, 1873.

Professor BUSK, F.R.S., *President, in the Chair.*

THE minutes of the previous meeting were read and confirmed.

ISRAEL ABRAHAMS, Esq., 56, Russell Square, W.C., was elected a member.

The following presents were announced, and the thanks of the meeting were voted to the respective donors.

FOR THE LIBRARY.

- From M. I. GOZZADINI.—Congrès International d'Anthropologie et d'Archéologie Préhistoriques, Bologne, 1871. 8vo.
- From the EDITOR.—La Revue Scientifique, Nos. 24, 25, and 26, 1873. 4to.
- From Capt. S. P. OLIVER, R.A.—Προϊστορικὴ Αρχαιολογία. 8vo.
- From the EDITOR.—The Food Journal, for December 1873. 8vo.
- From the PUBLISHER.—Human Nature, for December 1873. 8vo.
- From the ASSOCIATION.—Opening Address of the President of the Geologists' Association, November 7th, 1873. 8vo.
- From the AUTHOR.—Darwinism and Design; or, Creation by Evolution. By George St. Clair, F.G.S. 8vo.
- From the AUTHOR.—Roman Antiquities: Mansion House. By John E. Price, F.S.A. 4to.
- From the INSTITUTE.—The Canadian Journal. Vol. XIV, No. 1, 1873. 8vo.
- From the SOCIETY.—Proceedings of the Royal Society, No. 147. 8vo.
- From the SOCIETY.—Transactions of the Royal Society of Literature. Vol. X, Part 3. 8vo.
- From the SOCIETY.—Proceedings of the Liverpool Literary and Philosophical Society, No. 27, 1872-3. 8vo.

The Director read the following papers:

INTRODUCTION *to the* TRANSLATION *of the* HAN ANNALS. By H. H. HOWORTH.

DR. PRITCHARD, the founder of ethnological science in England, regretted nearly thirty years ago that the great Chinese annals of the Han dynasty were inaccessible to European students. The Jesuits of the last century, De Guignes, Gaubil, Mailla de Moyrac, and others, supplied us with a vast quantity of valuable material in the translations which they made; but these were confined almost entirely to epitomies and to the works of the encyclopædists, such as Matouanlin, etc. As the principal of these epitomies fills twelve closely-packed quarto volumes in Mailla's work, it may be argued that we might be content; but absolute contentment is a virtue shared only by the dead and those who sleep, and is impossible to those who hunger for more knowledge, and know where it is to be found, but have not access to the mine. And this is especially true of ethnologists. We, whose ambition it is not merely to describe the manners and customs of the savage tribes of the earth, but who also claim to be pioneering the road by which the origin of mankind and of the arts and idiosyncracies which distinguish him may be reached, are never content. The road is very often dreary and repulsive, and very often treacherous, and it is natural that we should be anxious for more sound material upon which to build it. Our Western sources of information are at present nearly exhausted. What may be buried in Mesopotamia and elsewhere we can only dream about; but in the far east, in China, there is a vast mass of historical literature which is buried only inasmuch as it is untranslated. The imperial annals of the various dynasties, which are as yet almost untouched, and which are distinguished perhaps as no other annals elsewhere are by the extreme accuracy of their details. There we have a minute account of the intercourse of China with its neighbours reaching back in contemporary annals to at least the second century before Christ, and those who have laboured in the dreadful quagmires and quicksands that characterise the history of Central and North Eastern Asia must sigh for the time when these accounts shall be within their reach.

The series of Chinese annals begins properly with those of the Han dynasty, which reigned from about 202 B.C. to about 220 A.D. This was the golden period of Chinese history, when the empire reached its furthest limits, when Buddhism was introduced, and when a glorious literature flourished.

During the dynasty of the Cheou the old imperial unity had

been invaded by the creation of various feudatories, who became almost independent. It was one of the great works of the founders of the Thsin dynasty, that dynasty which gave its name to China, which built the great wall, introduced the use of paper and the present system of writing, and which reigned immediately before the Han, to destroy these feudatories and to restore the unity of the empire. To do away with the evidence upon which the claims of these feudatories were based it was ordered that all the ancient books and histories should be burnt. "These orders," says Klaproth, "were rigorously executed. The literates of China have never forgiven the outrage, which is the reason why the old traditions of the earlier years of the Chinese monarchy have come down to us so feebly. After the accession of the Han dynasty, a search was instituted for such fragments and remains of the old books as could be found. It was with these materials, and with the aid of an old man who knew the Chu-king by heart, that this sacred work was again recovered, and that the earlier history was once more recorded." (Klaproth, *Tableaux Historiques de l'Asie*, 36 & 56.) This accounts for there being no annals earlier than those of the Han.

The immense value of the Han annals has been enlarged upon by many writers. They contain a wonderfully detailed account of the greater part of Central and Eastern Asia, and, as I have said, Dr. Pritchard long ago lamented their inaccessibility. This has not since been remedied. It is true they have been translated by the Russian mission at Peking; but the translation being in Russian, is as inaccessible almost as the original. One great difficulty, no doubt, has been the size of the work, which I believe fills one hundred Chinese volumes.

At the Congress of Orientalists at Paris, Mr. Douglas, the very courteous and skilled professor of Chinese at King's College, brought the question of this translation before the savants there. The proposal was very well received, and it was determined to distribute the annals for translation to various competent scholars and to issue the work by subscription. As yet, I believe, this is all that has been done. Meanwhile, I had written out to my friend, Mr. Wylie, of Shanghai, known everywhere where Chinese studies are known, and especially by his able papers in the journals of the Royal Asiatic Society, to ask him if he would abstract the ethnological part of the annals, in order that it might, if the Society should deem it valuable, be printed in our *Journal*. Some three or four months after I received this, the first instalment of the work which you have been good enough to accept. Such is a brief history of the following translation.

The portion of the work which has reached me as yet refers chiefly to the Hiong-Nu, about whom I wish to say a few

words. De Guignes, than whom no one has done more for the elucidation of the ethnology of Asia in ancient times, propounded the doctrine that the European Huns were descended from the Hiong-Nu of the Chinese writers, and he consequently, in his history of the Huns, worked out in some detail the account of the Hiong-Nu, so far as it could be collected from the narratives of Matuanlin and the other epitomisers of the Chinese annals. Minute ethnology was then in its infancy. The distinctions between Mongols, Turks, Ugrians, etc., etc., was hardly recognised because hardly known. Since the days of De Guignes the subject has received immense illustration from various quarters, and now no European scholar of any repute—save perhaps Dr. Latham—connects the Huns with the Hiong-Nu. The Huns, as I have elsewhere argued, were a race of Ugrians led by a caste of another race now represented by some of the Lesghian tribes of the Caucasus. The Hiong-Nu were not Ugrians. It was Klaproth, whose grasp of the whole subject of the ethnography of Northern Asia was most masterly, and who, notwithstanding some failures, I hold to have been *facile princeps* among Asiatic ethnologists, first proved that the Hiong-Nu were Turks, and his conclusions were endorsed by the very competent authority of Abel Remusat, and since by other scholars.

As Klaproth's analysis of the remnants of the language of the Hiong-Nu which have reached us has not appeared in any English publication known to me, and as it furnishes the best possible evidence of the Hiong-Nu having been Turks I shall here insert it. Klaproth's essay on the identity of the Thiu khiu and the Hiong-Nu with the Turks was published in the seventh volume of the "*Journal Asiatique*," 257, *et seq.* From it and from Abel Remusat's "*Recherches sur les Langues Tartares*," 11, *et seq.*, I shall chiefly extract my materials.

Many centuries before our era, and for a long time after, says the former author, the part of Asia bordering upon China on the north and north-west was inhabited by a people called Hiong-Nu by the Chinese. This name means vile slaves. M. Abel Remusat conjectures, with a good deal of probability, that this is only a transcription into characters of a humiliating sense of the indigenous name of the nation which is unknown to us.

It would not be profitable to epitomise a history which is told in full in the following paragraphs, and I shall content myself with collecting the evidence which fixes the relations and affinities of the Hiong-Nu. After being the terror of the Chinese borderland for many centuries, the Hiong-Nu were finally dispersed in the year 460, and it was then that a frag-

ment of them settled in the Kinchan or Altai mountains, and took the name of Thiu khiu. The meaning of the name is helmet, and they were so called, according to the Chinese, because the mountain where they settled was helmet-shaped. *Terk* means an iron helmet according to Klaproth (see the name discussed, *op. cit.* 262.) The Chinese accounts are unanimous in making the Thiu khiu a fragment of the Hiong-Nu and in identifying the two races. This being so, it is profitable to analyse the fragments of the language of the Hiong-Nu and Thiu khiu that have reached us. This analysis has been performed, as I have said, by Klaproth, and I will now extract it.

A house in Thiu khiu was *oui*, in Eastern Turkish *oui*, in Osmanli *eiö*, in Mongol *ghér*.

A wolf in Thiu khiu was *furi* or *buri*, in Eastern Turkish *buri* or *bure*, in Mongol *tchino* or *tehinna*.

Meat in Thiu khiu was *achan*, which seems to be the same word as Turkish *ach*, nourishment; and *achmak*, to eat. In Mongol meat is *mikha*.

Black in Thiu khiu was *khara*, in Turkish *kara*, also in Mongol.

A horse in Thiu khiu was called *kholan*. This is the Turkish word *k'ulân*, by which the wild horses are known. In Mongol a horse is *mori*.

A camp or village of the nomades in Thiu khiu was *kui*. In Turkish *kui* means a village. The Mongols call it *tosko* or *gat-chaga*. They have also adopted the word *kui*.

The hair in Thiu khiu was *sogo* or *soko*. This is the Turkish word *sâteh* or *sâdj*; in Mongol *ussu*.

An inspector in Thiu khiu was *karatchue*. This word is still in use in Eastern Turkish, where an intendant is *karawtchi* or *karawtse*, and in Uighur an official is styled *kharatcher*.

Big, full, or heavy in Thiu khiu was *sain dolo*; in Jakut, which is a Turkish dialect, *son* is big; in Osmanli, *dolu* is full; big in Mongol is *budun* or *djudjan*, heavy is *kundun*, and full *tugureng*.

The earth in Thiu-khiu was *bo*, this word has been lost among the written Turkish dialects, but among the Jakuts, on the borders of the frozen ocean, *bor* means the earth; the Mongols call it *gadzar*.

A judge among the Thiu-khiu was called *tére* in Eastern Turkish; *tére* or *turé* in Mongol *Sigum*.

The heaven, or God, in Hiong-Nu and Thiu-khiu was styled *tenghiri*, this word still survives in all the Turkish dialects as *tengir*. The Mongols have adopted it as the name of the inferior deities, the real name for heaven among them is *oktorgoi*.

Old in Thiu-khiu was *kari*, this is the Eastern Turkish *kâri*

whose root is found in the Osmanli word k'art, an old man. In Mongol it is kuksin.

A valiant man in Thu-khiu was chibor, this is the Eastern Turkish word chibor, adapted by the Persians it designates the great trumpet which gives the signal for attack; another name for brave men was yenghefu or yenghet, which was no doubt derived from the same root as the Turkish yenghin, a victor, and yengmek, to be victorious. The commanders of troops among the Thiu-khiu were called kulutch, this is clearly the Turkish word kilidj which means a sword, and which is also an honorary title, as in the various princely names, Kilidj arslan, emir-azz-eddin kilidj, dzu'fekar kilidj, etc. Khadjo was a princely title among the Thiu-khiu, which is surely the same word as khadjah, master, lord, in eastern Turkish, and has been adopted in Persian.

The wives of the Khakan of the Thiu-khiu bore the title of kakhatun or khatun, this is the Turkish word khatun, which means great lady, princess. It is one of the large class of words the Mongols have borrowed from the Turks. In 552 Thu-men khan, of the Thiu-khiu, died and left his lands to his son Kolo, who took the title of Iski Khan. He had a son whom he excluded from the throne and gave it to his own brother Chikin, known under the name of Mukan Khan, he also styled himself Yen-i; one cannot mistake in Iski Khan the Turkish name Iski Khan, *i.e.*, the ancient khan, and in Yen-i the word yenhi, which means the new in the same language.

In "Klaproth's Critique on the works of M. P. H. Bitchurinski on the History of the Mongols," I find it is stated that the first Chen-yu or king of the Hiong-Nu was called Theu-man, this is probably connected with tuman, which, both in Mongol and Turk, means ten thousand. Again, about the end of the first century of our era the Chen-yus of the Hiong-Nu began to attach the title jo-thi, meaning, in their language, dutiful to one's parents, just like hias in Chinese, this Klaproth says is indubitably the Turkish word yakhechi, pronounced djakchi by the greater parts of the nomade Turks of Central Asia, and which means good, excellent, virtuous; the first particle is pronounced jo in the Mandarin dialect, but yok or jok in the popular language. The second character has also the sound chi, so that jo in the pronunciation of the characters which Hyacinthe gives ought to be rather yokechi or jokchi, which is the same as the Turkish word yakhechi. [See Klaproth, *op. cit.*, 11 and 12.]

These are sufficient proofs that the Hiong-Nu were the ancestors of the Turks, the forefathers of that race of nomades who have done more to revolutionise the life of Asia since the Christian era than all other races who became the masters of

India and Persia, of Asia Minor and Syria, who formed the main portion of the vast armies of Jinghiz Khan and his successors and of Timur. It is surely an important and valuable accession to our ethnological materials to have the earlier history of this race set out. I shall not attempt to epitomise it. This has been done enough already, it is a more agreeable duty to be able to present the original account in its pristine form and to a careful study of this I would commend all those who wish to pierce back somewhat further into the origins of mankind by the only profitable road, namely, from the known to the unknown.

*HISTORY of the HEUNG-NOO in their RELATIONS with CHINA.**

Translated from the Tseen-Han-shoo. Book 94, etc. By A. WYLIE, Esq.

THE first ancestor of the Heung-noo, named Chun-wei, was a descendant of the Great Yu¹ the founder of the Hea dynasty.

Previous to the time of Yaou² and Shun³ we hear of a race called the mountain Jung.⁴ These were the Heen-yun⁵ or Heun-yuh,⁶ who inhabited the northern regions, and removed from place to place, according to the pasturage for their flocks and herds. The bulk of their stock consisted of horses, oxen and sheep; but in smaller numbers they bred likewise camels, asses, mules, horse-ass hybrids, wild horses and hybrids of the same. Removing their herds to find water and pasturage, they had no fixed cities, but dwelt on their rural patrimonies, each family having its allotted portion of land. They had no written character, but performed oral contracts. The children rode on sheep, and shot birds and squirrels with the bow and arrow. When a little bigger, they shot foxes and hares, the flesh of which they ate. On reaching manhood, when able to bend a bow, they were fully equipped and mounted on horseback. In time of peace they hunted for their living; but when harassed by war, they cultivated martial exercises, to fit them for invasion or attack, which was agreeable to their disposition. The taller troops were armed with bows and arrows; the shorter with

* The greater part of this account, by Pan-Koo, the author of the "Han-shoo," or "History of the Western Han," is an almost verbatim quotation from the earlier history "She-ke," by Sze-ma Tseen.

¹ Yu is thought to have lived about the 23rd century, B.C.

² According to tradition in the 24th century, B.C.

³ Reported to have flourished in the 23rd century, B.C.

⁴ So called during the Chow dynasty, B.C. 1134-256.

⁵ So called in the time of Yaou.

⁶ These occupied the site of the present cities of Peking, Ke-chow, and Meih-yun.

swords and spears. When successful in the contest, they pressed forward; but on meeting with a reverse, they retreated, and thought it no shame to run away. On gaining a victory they showed no regard to propriety or equity. From the king downwards all ate the flesh of domestic animals, and clothed themselves with the skins, wearing a fur covering over all. The able-bodied ate the fat and choice portions, while the aged ate and drank what was left. The strong and robust were held in esteem, while the old and feeble were treated with contempt. When a father died, they married their widowed mother; and when a brother died, it was customary to marry his widow. Their names were not transmitted to their descendants.

At the time of the decadence of the Hea dynasty, when Kung Lew⁷ lost the superintendence of agriculture, he created an influence among the Western Jung. He fixed his headquarters at Pin⁸ B.C. 1796.

More than three hundred years after this, the Jung Teih tribes made an attack on the Great King, Tan Foo, the ninth generation descendant of Kung Lew; when Tan Foo was defeated and fled to the Ke⁹ mountain (B.C. 1326). The inhabitants of Pin all followed Tan Foo and established a city, which became the nucleus of the Chow dynasty.

In B.C. 1138 Chang the Western chief of the Chow, better known as Wan Wang, the grandson of Tan Foo, defeated the Keuen-e tribe.

Woo Wang, the son of Wan Wang, defeated Chow, the last monarch of the Shang in B.C. 1121, and encamped at Lo.¹⁰ He afterwards made his residence at Fung-haou on the site of the present prefecture of Se-gan in Shen-se; whence he expelled the Jung and the E, to the North of the King and Lo rivers. At the appointed times they returned with tribute, their territory being called the Wild domain.

When the Chow dynasty was beginning to decline, in B.C. 966. Muh Wang gained a victory over the Keuen Jung, and received from them four white wolves and four white deer which he took home with him. After that they came no more from the Wild domain.

In B.C. 951 a new criminal code was issued by the chief justice

⁷ A descendant of How-tseih, the ancestor of the Chow dynasty. Kung Lew held office under Kee Kwei, the last monarch of the Hea (B.C. 1818—1765).

⁸ The present Pin Chow in Shense. N. lat. 35 deg., 4 min.; E. long. 108 deg., 6 min.

⁹ A hill about thirty miles north-east from the present city of Ke-shan (N. lat. 34 deg., 20 min. E. long. 107 deg., 40 min.).

¹⁰ The present Lo-yang, N. lat. 34 deg., 43 min., 15 sec. E. long. 112 deg., 27 min., 40 sec., lies to the east of the site of the ancient city of Lo.

Leu, which no doubt modified the intercourse of the Chinese with the wild tribes.

During the reign of E. Wang the grandson of Muh Wang, there was a decline in the royal house. In B.C. 928 the Jung made an irruption ; which was followed by one of the Teih tribes in 922 ; thus violently harassing the central government, and causing much distress. Among the popular ballads at the time, we find the following stanza :—

“ Without house and without home ;
Reduced to misery by the Heen-yun.
Notwithstanding our daily precautions,
The Heen-yun are a great scourge to us.”¹¹

In B.C. 826, while Seuen Wang the great grandson of E. Wang, was on the throne, the general Yin Keih-foo was put in command of an army, with a commission to subjugate these refractory tribes. The success of the expedition is commemorated in the following popular lines :—

“ We expelled the Heen-yun,
As far as Tae-yuen ;¹²
How gaily sped our chariots,
To build a wall at Suh-fang.”¹³

The fame of the empire was then spread far and wide, and barbarous tribes from all quarters came to tender their subjection.

In B.C. 778, Yew Wang the son of Seuen Wang became enamoured with his concubine Paou-sze ; and his infatuation eventually led to a quarrel with the Marquis of Shin, in B.C. 770. The latter incensed at the king, united with the Keuen-Jung, attacked and killed him at the Le mountain. They then seized the Chow territory and carried off the produce ; while they dwelt between the King and Wei rivers, and distressed the kingdom by their ravages. But Chow was rescued from their hands by Seang the Duke of Tsin.

On the accession of Ping Wang, the son of Yew Wang, in the following year, he removed the capital eastward to Lo, in order to avoid the western tribes.

In 760, Seang the duke of Tsin, repulsed the Jung and drove them as far as Ké, upon which he was made one of the feudal princes of the Empire.

Some sixty-five years after this, the mountain Jung passed over Yen, and made a raid on the state of Tse ; when a battle ensued on the border, between them and He the duke of Tse.

¹¹ “ She-king,” part ii, book 1, ode 7.

¹² The present capital of Shan-se province, N. lat. 37 deg., 53 min., 30 sec. E. long. 112 deg., 30 min., 30 sec. “ She-king,” part ii, book 3, ode 3

¹³ The region now occupied by Ning-hea Foo, N. lat. 38 deg., 32 min., 40 sec., and Hwan-Heen, N. lat. 36 deg., 39 min. E. long. 107 deg., 7 min. “ She-king,” part ii, book 1, ode 8.

Forty-four years later, Yen was seriously attacked by the mountain Jung; but seeking assistance from Tse, Duke Hwan of that state attacked the invaders on the north, and completely routed them.

More than twenty years after this, the Jung Teih made an attack on Seang Wang, the Prince of Chow, in this city of Lo; when the latter fled to the city of Fan¹⁴ in the state of Ching.

On a former occasion, when Seang Wang wishing to attack Ch'ing, he took a Teih lady for a consort; and having formed an alliance with that tribe, they made a joint attack on Ch'ing. That enterprise over, the Teih princess was degraded, became incensed against the sovereign, and determined to supplant him. Hwuy the stepmother of Seang Wang having a son Tae, that she wished to place upon the throne, that lady, in concert with the Teih princess and her son Tae, formed a confederate correspondence with the Jung Teih, who broke into the city, drove Seang Wang from his palace, and set up Tae for king in his stead. Some of the Jung-teih then settled east of Luh-hwan,¹⁵ as far as Wei,¹⁶ where they became still more audacious in their plundering raids.

When Seang Wang had been four years in exile, he sent an envoy to Tsin, to make known his distress. But Wan the Duke of Tsin, having just succeeded to the power, wished first to arrange the affairs of his chiefdom; after which he raised troops, attacked the Jung-teih, killed the usurper Tae, and reinstated Seang Wang in the city of Lo.

At that time Ts'in and Tsin were powerful kingdoms. Wan the Duke of Ts'in forcibly removed the Jung-teih, and settled them between the Yin and Lo rivers, to the west of the Yellow River, where they were denominated the Red Teih and the White Teih.

Duke Muh of Ts'in obtaining the service of Yew-yu, eight nations of the Western Jung were induced to tender their allegiance to him.

Westward from Lung, in Meen-chow¹⁷ were the Keuen Jung and the Teih-kwan Jung. To the north of the K'e and Leang mountains and the King and Tseih rivers, were E-k'eu,¹⁸ the

¹⁴ On the site of the present city of Teang-Ching. N. lat. 33 deg., 52 min. E. long. 113 deg., 38 min.

¹⁵ N. lat. 34 deg., 10 min.; E. long. 112 deg., 10 min., the site of the present district of Jung.

¹⁶ The present E-fung city. N. lat. 34 deg., 55 min. E. long. 115 deg., 7 min., 30 sec.

¹⁷ This appears to have been on the site of the present Ts'in-chow, the chief city of which is N. lat. 34 deg., 36 min. E. long. 105 deg. 48 min.

¹⁸ These occupied the site of the present K'ing-yang Prefecture. N. lat. 36 deg., 3 min. E. long. 107 deg., 44 min., 30 sec.

Ta-le,¹⁹ the Woo-che,²⁰ and the Heu-yen²¹ Jung. To the north of Tsin were the Lin-hoo,²² Low-fan Jung;²³ and on the north of Yen were the Tung-hoo mountain Jung. These were all scattered among the valleys and ravines, each tribe having its own chief. They often assembled together to the number of a hundred or more, but were never able to combine as one.

About a hundred years later, Taou the Duke of Tsin sent Wei-Keang to make peace with the Jung Teih, when the latter paid Court to Tsin.

Some hundred years afterwards, Seang the Viscount of Chaou passed over Keu-choo mountain, subdued Ping²³ and Tae²⁴ reaching the Hoo-mih tribe.

Subsequently Chaou uniting his forces with Han and Wei, they exterminated Che-pih, and divided the territory of Tsin among them. Chaou held all north of Tae and Keu-choo; and Wei had Seho²⁵ and Shang-keun,²⁶ up to the borders of the Jung possessions.

Subsequent to this the E-keu Jung built cities for self-defence, but Ts'in gradually encroached upon their territory. When the Prince Hwuy came into power, he took twenty-five of their cities; and afterwards attached Wei, which surrendered the whole of Se-ho and Shang-keun to Ts'in.

In the reign of Chaou, King of Ts'in, the King of the E-keu Jung had criminal intercourse with the dowager Penen, who gave birth to two boys. She subsequently betrayed the King of the E-keu Jung, who was killed at Kan-tsenen.²⁷ Troops were raised and the E-keu exterminated.

Ts'in being then in possession of Lung-se,²⁸ Pih-t'e²⁹ and Shang-keun, built part of the Great Wall to keep off the Hoo tribes.

¹⁹ These were on the site of the present district of Chaou-yeh. N. lat. 38 deg., 48 min. E. long. 110 deg., 4 min.

²⁰ These lived on the site of the present King Chow. N. lat. 35 deg., 22 min. E. long. 107 deg., 22 min.

²¹ These seem to have inhabited the site of the present city of Chwaeg-leang. N. lat. 36 deg., 47 min. E. long. 103 deg., 20 min.

²² This was the site of the Suh chow. N. lat. 39 deg., 25 min., 12 sec. E. long. 112 deg., 29 min.

²³ The present Chin-ting Prefecture. N. lat. 38 deg., 10 min., 55 sec. E. long. 114 deg., 47 min.

²⁴ The present Yu-chow. N. lat. 39 deg., 50 min., 54 sec. E. long. 114 deg., 38 min.

²⁵ Site of the present Fau-chow-foo. N. lat. 37 deg., 19 min., 12 sec. E. long. 111 deg., 43 min.

²⁶ On the site of the present E-chuen. N. lat. 36 deg., 8 min. E. long. 110 deg., 2 min.

²⁷ On the site of the present Tsing-ho. N. lat. 37 deg., 9 min. E. long. 115 deg., 48 min.

²⁸ The present Teih-taou. N. lat. 35 deg., 21 min., 56 sec. E. long. 104 deg., 0 min., 39 sec.

²⁹ The present K'ing-yang Prefecture. *Vide supra*.

Woo-ling the King of Chaou changing the national customs adopted the Hoo dress, practised horsemanship and archery, subjugated the Lin-hoo Low-fan tribes on the north, and built a further portion of the Great Wall. From Tae and the Yin mountain,³⁰ down to Kaou-keue,³¹ stockades were established; and Yun-chung,³² Yen-mun,³³ and Tae-keun³⁴ departments were fixed.

After this, Yen had a far-sighted general Ts'in K'ae, to whom was confided a mission to the Hoo tribes; and these putting implicit faith in him, gave in their allegiance. This was immediately followed by the subjugation of the Tung-hoo (Eastern Hoo), whose country lay conterminous with Yen for more than a thousand *le*. Ts'in Foo-yang who combined with King Ko to stab the King of Ts'in, was the grandson of Ts'in K'ae. Yen also built a part of the Great Wall, from Tsaou-yang to Seang-ping; and the departments of Shang-kuh,³⁵ Yu-yang,³⁶ Yew-pih-ping,³⁷ Leaou-se³⁸ and Leaou-tung³⁹ were fixed to keep the Hoo in check.

At this time there were seven states of respectable standing at war with each other, three of which were conterminous with the Heung-noo; a name which we now begin to find applied to the Jung tribes.

Afterwards in the time of Le Muh the Chaou general, the Heung-noo did not dare to encroach on the Chaou territory.

When Ts'in subverted the other six states, the Emperor Che-hwang put Mung Teen in command of a force of several hundreds of thousands; when he chastised the Hoo on the

³⁰ A hill on the boundary of the Turk territory, outside the barrier, north of Suh-chow.

³¹ Name of a precipitous mountain, north of the department of Suh-chow.

³² Comprising the present Tae-tung. N. lat. 40 deg., 5 min., 42 sec. E. long. 113 deg., 18 min., 30 sec., and Hwai-jin N. lat. 39 deg., 54 min. E. long. 113 deg., 9 min.

³³ Comprising the present Tae-chow, N. lat. 39 deg., 5 min., 50 sec. E. long. 130 deg., and Hwan-yuen, N. lat. 39 deg., 41 min. E. long. 113 deg., 47 min.

³⁴ Included in the site of the present Prefecture of T'ae-lung, the chief city of which is N. lat. 40 deg., 5 min., 42 sec. E. long. 112 deg., 35 min.

³⁵ On the site of part of the present Prefecture of Shun-teen, the capital of which is N. lat. 39 deg., 54 min., 13 sec.; E. long. 116 deg., 30 min., 30 sec.

³⁶ This occupied the site of the present districts of Ke-chow, N. lat. 40 deg., 5 min.; E. long. 170 deg., 30 min.; and Mei-hyun, N. lat. 40 deg., 23 min., 30 sec.; E. long. 116 deg., 54 min., 46 sec.

³⁷ This occupied the site of the present department of Tsun-hwa, N. lat. 40 deg., 11 min.; E. long. 118 deg., 1 min.; and part of the Prefecture of Yung-ping, N. lat. 39 deg., 56 min., 10 sec.; E. long. 118 deg., 55 min., 58 sec.

³⁸ Part of the present Prefecture of Yung-ping.

³⁹ This extends from the 40th to the 42nd degree of latitude, and from 116th to the 125th degree of longitude.

north, and took all the country south of the Yellow river; erecting stockades along the course of the stream. He built forty-four district cities overlooking the river, and removed his prisoners to populate them. He made a road straight through from Kew-yuen⁴⁰ to Yun-yang.⁴¹ Taking advantage of the precipitous hills on the border, the water-courses and ravines were deepened; and wherever it was practicable, defensive works were effected, from Lin-taou⁴² to Leaou-tung, more than ten thousand *le*. Again crossing the Yellow river, it passed the Yang mountain and went through Peh-seay.⁴³

At that time, the Tung-hoo⁴⁴ had become a formidable power, and the Yuh-te⁴⁵ were in a flourishing condition. The Shen-yu (or Prince) of the Heung-noo was named Tow-man. The latter, meeting with a reverse in his contest with T'sin, removed northwards.

More than ten years later, Mung Teen died, and the princes of the empire withstood the encroachments of Ts'in. The Central kingdom was plunged into a state of turbulence; and the criminals who had been located in the cities by Ts'in, all decamped.

The Heung-noo now feeling themselves less under restraint, gradually advanced across the Yellow river, till they were continuous with the central kingdom, at the old stockades.

The Shen-yu's eldest son was named Maou-tun, but his beloved consort having subsequently given birth to a boy, it was the aim of the Shen-yu to set aside Maou-tun, in favour of the younger. With this object in view, Maou-tun was despatched on a mission to the Yuete, and while absent on this service, an attack on the tribe was suddenly organised by his father Tow-man. By this movement Maou-tun was placed in the most imminent peril, and found it necessary to seek safety in flight; the better to effect which, he stole one of their swiftest horses. Returning to his father he was made full commander with the

⁴⁰ On the site of the present Yu-lin Prefecture, N. lat. 38 deg., 18 min., 8 sec.; E. long. 109 deg., 24 min., 30 sec.

⁴¹ On the site of the present Fung-tseang Prefecture, N. lat. 34 deg., 25 min., 12 sec.; E. long. 111 deg., 31 min., 35 sec.

⁴² On the site of the present Min-chow, N. lat. 34 deg., 24 min.; E. long. 104 deg.

⁴³ An ancient settlement 120 *le* to the east of Paougau-chow.

⁴⁴ The stock from which the present dynasty of China is sprung.

⁴⁵ The present Leang-chow, N. lat. 37 deg., 59 min.; E. long. 102 deg., 48 min.; Kan-chow, N. lat. 39 deg., 0 min., 40 sec.; Suh-chow, N. lat. 39 deg., 45 min., 40 sec.; E. long. 99 deg., 07 min.; Yen-gan foo, N. lat. 36 deg., 40 min., 20 sec.; E. long. 109 deg., 28 min.; and Sha-chow, N. lat. 40 deg., 15 min., E. long. 95 deg., 39 min., are on the site of the original kingdom of the Yue-te. Klaproth, to whom we owe many valuable identifications, thinks the Yue-te are the Getæ of Roman history, and suggests a similar origin for the Goths.

generalship of ten thousand cavalry ; but he seems to have seen through Tow-man's designs, as the sequel will show.

Having invented a sounding arrow, Maou-tun perfected himself in the science of equestrian archery. He then issued a general order to his troops, to the effect that, at whatever he should discharge the sounding arrow, all his followers should aim at the same, under pain of decapitation ; and at the chase, whoever should fail to shoot at the object at which the sounding arrow was aimed, should forthwith undergo capital punishment.

To ascertain how far his followers might be relied upon, he speedily put them to the test. Taking the sounding arrow he aimed at his favourite horse, when some of those about him hesitating to follow his example, he had them decapitated on the spot. Not long after this event, a sterner test was still in store ; his attendants stood aghast at seeing the sounding arrow let fly at his beloved wife ; and some fearing to comply with the standing order, the supreme penalty was at once and remorselessly inflicted. On a subsequent occasion, while engaged in the chase, he discharged the sounding arrow at the Shen-yu's favourite horse, and had the gratification of finding his attendants without exception take aim at the doomed victim. Feeling then that he was surrounded by a guard in whom his confidence would not be misplaced, he resolved on the accomplishment of the grand stroke of his project. Taking advantage of a general hunt, he seized a favourable opportunity to let go the sounding arrow at the Shen-yu his father, which movement being immediately followed by the darts of his followers, Tow-man fell mortally wounded on the field. This tragedy was followed up by the murder of his step-mother, his younger brother, and all the ministers who refused allegiance to him.

Having thus cleared the way Maou-tun set himself up as Shen-yu in his father's place in B.C. 209. Scarcely had he assumed power, however, when the Tung-hoo, who had become a powerful nation, hearing of the dark deeds of Maou-tun and his assumption of supreme power, sent an envoy to him, asking for Tow-man's swiftest charger. Maou-tun laid the matter before his ministers, who all counselled him to refuse the request. " Shall I," said he, " for the sake of a horse, be guilty of an unneighbourly action ?" and thereupon sent the charger. This transaction was interpreted by the Tung-hoo as an evidence that Maou-tun stood in fear of them ; and acting under this impulse, they forthwith despatched an envoy the second time, requesting the Shen-yu's consort. As before, he sought the advice of his attendants, who all indignantly counselled that the insult should be avenged by an appeal to arms. Maou-tun,

however, calmly replied—" Shall I for the sake of a woman, be guilty of an unneighbourly action ?" So saying, he presented his beloved consort to the Tung-hoo. Elated with his success on these two occasions, the king of the Tung-hoo became still more overbearing towards the Heung-noo. A strip of neutral ground upwards of a thousand *le* in length lay between the two nations. This was now invaded by the Tung-hoo, who sent an envoy to Maou-tun, saying :—" We wish to take possession of the intermediate waste land, which is of no use to the Heung-noo." As before, Maou-tun sought the advice of his ministers on the question. Some of them replied, " This is abandoned territory, and it is of little consequence whether it be given or refused." Maou-tun full of wrath rejoined :—" Land is the foundation of a nation ; how can it be given up ?" Those who recommended an assent to the Tung-hoo proposal paid the penalty with their heads. Leading forward his troops in person, he issued the command that whoever lagged behind should suffer decapitation. By a rapid eastward movement, he took the Tung-hoo by surprise ; who in their contempt for Maou-tun, had neglected all precautionary measures. The latter falling on them with his troops, cut the Tung-hoo army to pieces, killed the king, captured the people, and carried off the cattle. Returning from this expedition, he forthwith marched westward and chastised the Yue-te. He next turned his attention to Pih-yang the king of the Low-fan tribe in Ho-nan ; recovered the Heung-noo territory that had been seized by the Ts'n general Mung Teen, and regained possession of the ancient Ho-nan stockades at the Chinese passes, as far as Chaou-na⁴⁶ and Foo-she.⁴⁷ He then invaded the territories of Yen and Tee.

About this time the state of Hau was engaged in a feud with Heang Yu, and the central government was exhausted by military operations ; while Maou-tun was daily gaining strength, till he had a force of more than three hundred thousand bowmen.

From their first ancestor down to the time of Tow-man, for upwards of a thousand years, the tribe had suffered the vicissitudes and alternations incident to dispersion and long separation ; and there is no detailed record of the secular changes among them. Under Maou-tun, however, the Heung-noo attained their greatest power. They had brought into complete subjection all the wild tribes on the north, while China was their rival nation on the south. The following were the designations of their principal dignitaries and officers. The

⁴⁶ On the site of the present Ping-leang, N. lat. 35 deg., 34 min., 48 sec. ; E. long. 106 deg., 40 min., 30 sec.

⁴⁷ Present district of the same name. N. lat. 36 deg., 42 min., 20 sec., E. long. 129 deg., 28 min.

family name of the Shen-yu was Leuen-te, and his national designation Chang-le kwa-too Shen-yu. *Chang-le* in the Heung-noo language signified "Heaven," and *Kwa-too* was "Son,"⁴⁸ while *Shen-yu* expressed "Majestic grandeur." The whole implied the "Shen-yu comparable to Heaven." Next in rank were the Right and Left Sage Regulos; then came the Right and Left Luh-le; then the Right and Left Great Generals; the Right and Left Great (*Too-wei*) Pacifiers; the Right and Left Great Tang-hoo; and the Right and Left Kuh-too Marquises. *Too-ke* in the Heung-noo language means "sage"; hence the heir apparent was always called the Left Too-ke (or Sage) Regulo. From the Right and Left Sage Regulos down to the Tang-hoo, there were altogether twenty-four chiefs, who were designated "Ten thousand cavalry," the greater of them commanding over that number, and the lesser several thousands. The great ministers who held hereditary rank were the Yen, the Lan, and subsequently the Seu-po family. These three were of noble rank, and the first and last were accustomed to intermarry with the family of the Shen-yu. The Seu-po presided over the judicial proceedings.

The Left Regulos and Generals were stationed in the eastern region, from Shang-kuh eastward as far as Wei-mih and Chaou-seen. The right Regulos and Generals occupied the western region from Shang-keun westward as far as the Te Keang.

The Shen-yu had his capital at Yun-chung in Tae. Each chief had his own territory, while the people moved from place to place, to procure pasture and water for their flocks and herds. The Right and Left Sage Regulos and the Right and Left Luh-le had the largest estates. The Right and Left Kuh-too Marquises assisted in the supreme government. Each of the twenty-four chiefs had under him Captains of a thousand, Centurions, Decurions, petty princes, assistant Too-wei, Tang-hoo and Tsu-keu.

In the first month of the year, there was a small gathering of chiefs in the Shen-yu's ancestral chapel. In the fifth month they had a great gathering in the Dragon city (*Lung ching*);⁴⁹ when they sacrificed to their ancestors, heaven, earth and the spiritual powers. In autumn, when the horses were in good condition, they had a great gathering to circumambulate the wood, and take the numbers of the people and animals.

⁴⁸ Thus we see the Heung-noo monarch claimed the title of "Son of Heaven," the same as the Chinese. In the Ouigour, a language descended from the Heung-noo, the same term would be *Tingre-uchul*. The transition does not seem very violent.

⁴⁹ The western Hoo are said to have been all accustomed to worship the dragon; hence the Heung-noo place of the assembly was dedicated to the Dragon Spirit; a vestige of Serpent worship.

According to their laws, he who drew a sword a foot in length against another was put to death; anyone guilty of highway robbery was deprived of his family possessions. Small crimes were punished with the rack; and greater crimes with death. The longest imprisonment did not amount to ten days; and all the prisoners in the country only numbered a few individuals.

Early in the morning the Shen-yu went outside the camp to worship the rising sun, and in the evening he worshipped the moon.

In sitting, the post of honour was on the left, facing the north.

Woo and *Ke*, the fifth and sixth days of the denary cycle were esteemed the chief. In funerals they used coffins and cases containing gold, silver and clothing; but they had no grave-mound, trees, or mourning apparel. Several tens or even hundreds of near dependants and concubines were accustomed to follow their master's funeral.

In undertaking any military enterprise, they were always guided by the moon. When the moon was about full, they would engage in battle; but when on the wane, they withdrew from the contest. When one beheaded a captive in battle, he received a goblet of wine, and was allowed to retain the booty. Captives were given as slaves to their captors; so that in war, every man was struggling for personal profit. They were clever at leading the enemy into an ambuscade, and then surrounding them. The eagerness of the scramble was like birds flocking to the prey; but when calamity overtook them, they were dispersed like scattered tiles or passing clouds. Any one bringing home the body of a man slain in battle, got the property of the deceased.

At a subsequent period, in the north, they subjected the Hwan-yu,⁵⁰ the Keu-shih, the Ting-ling,⁵¹ the Kih-hwan-lung, and the Sin-le nations. The nobles and chief men of the Heung-noo then all submitted to Maou-tun, whom they looked up to as a wise prince.

The Han dynasty having just come into power, Sin, the prince of Han⁵² was removed to Tae, and made his capital at Ma-ye.⁵³ This city was forthwith surrounded by the Heung-noo, who took

⁵⁰ This is perhaps the same as Phillips mentions under the name of "Hun," a southern horde of the Tieh-ley, to the north of the country of the Ordos, which consisted of thirty thousand families. (Doolittle's "Vocabulary and Handbook," vol. ii, p. 206).

⁵¹ According to Phillips, this was an Alanic or Gothic race, inhabiting the borders of the Irtysh, Ob, and Jennissei rivers in Siberia. (See Doolittle's "Vocabulary," vol. ii, p. 208).

⁵² One of the feudal princes of the Han dynasty.

⁵³ The present city of Suh-chow in the north of Shan-tung. N. lat. 39 deg., 25 min., 12 sec., E. long. 112 deg., 27 min.

the place after a vigorous assault, in the autumn of B.C. 201. Having secured the submission and co-operation of Sin of Hán, the Heung-noo marched south, across the Kow stream, to attack Tae-yuen; and when under the walls of the capital, Kaou-te, the Emperor of the Han, took up arms and went in person to oppose them. It being winter time, what with the severe frost, the rain and the snow, twenty to thirty per cent. of the Emperor's troops lost the use of their fingers. Maou-tun, watching his opportunity, made an appearance of being defeated and fled, drawing on the Han troops after him. While the latter eagerly followed up the pursuit, Maou-tun concealed his best soldiers, and exposed the weak and emaciated. The Chinese, confident in their great numbers, told off three hundred and twenty thousand infantry for the pursuit. Kaou-te, with a detachment of these, arriving at Ping-ching,⁵⁴ before the great body had come up, Maou-tun immediately brought into the field three hundred thousand of his choicest cavalry, and surrounded the Emperor's party at Pih-tang hill.⁵⁵ For seven days all communication was cut off between the Chinese forces inside and those outside the circle, the enclosed party being thus deprived of provisions.

The Heung-noo horses on the west side were all white; on the east they were all white-faced greys; on the north they were all black, and on the south they were all bays. Reduced to extremities, Kaou-te quietly sent a messenger to the consort of the Shen-yu, to seek by liberal promises to secure her influence, in which he was successful. The consort addressing Maou-tun, said:—"Why should two sovereigns distress each other? Having now got possession of the Han territory, the Shen-yu can never occupy it; moreover the Shen-yu sacrifices to the spirits of the Lords of Han." Now Maou-tun having previously made an agreement with Wang Hwang and Chaou Le, two generals of Sin the prince of Hán, and having been long looking in vain for their arrival, at length began to suspect some plot between them and the Chinese; hence he acceded the more willingly to his consort's suggestion, and made an opening at one corner of the cordon. Kaou-te then ordered his troops to take their full complement of arrows, pointing outwards, and so passing straight out at the open corner, they joined the great body of the army. Maou-tun then withdrew his forces, and the Chinese troops ceased all hostile movements, while Lew King was sent to make a treaty of peace and friendship with the Heung-noo. Subsequently Sin of Hán, being a general under the Heung-noo, together with Chaou Le and Wang Hwang, several

⁵⁴ An ancient city to the east of 'Tae-tung foo.

⁵⁵ About 30 *li* to the east of Ting-tang heen, in Hin-chow.

times broke the treaty, forming bandit incursions on Tae, Yen-mun and Yun-chung. After no very long time Chin He rebelled, and in conjunction with the Sin of Han, formed a plot to attack Tae. The Chinese sent a commissioner Fan K'wae, who met the invaders, defeated them, and recovered the various cities of Tae, Yen-mun and Yun-chung, but did not go beyond the stockades.

About that time, parties of the Heung-noo frequently on meeting the Chinese general at the head of his troops, would tender their submission; on which account Maou-tun kept up a succession of raids on the country about Tae.

This was a cause of much anxiety to the Chinese, and eventually led the Emperor to adopt the notable expedient of sending a princess of the imperial house to Maou-tun, for his consort.

The lady Ung-choo was selected, and conveyed to the home of her new lord by Lew King. It was hoped that the issue of this union might be more imbued with Chinese susceptibilities and tendencies, and thus be the more easily brought under control. In pursuance of the same policy, the Chinese sent yearly presents of raw and wove silk, wine and food, thus aiming to cultivate Chinese tastes among them; and on each occasion the fraternal bond of peace and amity was renewed, so that for a time there was a cessation of Maou-tun's incursions.

Some time afterwards, Leu Wan the king of Yen rebelled, and with ten thousand of his cabal joined the Heung-noo; so that from Shan-kuh eastwards, the people were perpetually molested by their movements.

At length in the time of Haou-hwuy and Kaou-how, the son and relict of Kaou-te, Maou-tun, inflated with pride, was induced to indite a letter, which he sent an envoy to deliver to the empress dowager, couched in these terms:—"I, the solitary abject prince, born in a marsh and reared in a desert, among oxen and horses, have frequently approached the boundary, with a desire to roam over the middle kingdom. Your majesty now reigns *alone*, and I the solitary abject also dwell *alone*. When there is a want of harmony between two monarchs, matters are in every way unsatisfactory. Hence it is now my desire to exchange my present condition, for that which is still but in prospect." The empress on reading this was greatly enraged, and summoned her ministers Chin Ping, Fan K'wae, Ke P'oo and others, to consult about decapitating the envoy, raising troops and chastising Maou-tun. Fan K'wae said:—"Your servant will take a hundred thousand men, and with this force, will scour the country of the Heung-noo through and through." But Ke P'oo on being consulted, replied:—"K'wae deserves decapitation. For-

merly when Chin He raised an insurrection in Tae,⁵⁰ and K'wae was in command of the Chinese army three hundred and twenty thousand strong, the Heung-noo surrounded Kaou-te in Ping-ching, and K'wae was unable to break through the cordon ; till it became the subject of a ballad among the people, thus:—

“ In Ping ching the royal captive,
Is truly brought full low ;
Nor food nor drink for seven days,
Nor leave to draw a bow.”

Now when the echo of such songs has scarcely died away, and the wound is ready to reopen, K'wae is about to set the empire in commotion, with his pretence to march across the country at the head of a hundred thousand troops. All this is mere double-faced talk. Moreover the barbarians of the east and north are only to be compared to beasts and birds ; their good words are of no value ; their evil words are unworthy of notice.” The empress assented, and forthwith dictated the following reply : —“ The Shen-yu, not forgetful of his humble neighbour, has been pleased to honour her with an epistle. Your humble neighbour is apprehensive of the future, when she reflects on her advancing years, her falling hair, her decaying teeth, and unsteady footsteps. You have been misinformed ; there is no cause for anxiety. I am innocent of any covert intention, and venture to hope for your pardon. I beg herewith to present two imperial carriages and two studs of horses for your ordinary use.” When Maou-tun read this letter, he again sent an envoy to return thanks, saying, he had been ignorant of the etiquette of the middle kingdom, and trusted her majesty would graciously pardon him. He begged to make an offering of some horses. The treaty of peace and amity was then renewed.

In B.C. 179, the Emperor Wan ascended the throne, and the treaty with the Heung-noo was again renewed.

In the summer of 177, the Right Sage prince of the Heung-noo, settled in Honan, and committed plundering depredations ; whereupon the Emperor issued the following proclamation :—“ China contracted a fraternal treaty with the Heung-noo, by which the latter were not to invade our territory ; on which consideration they were treated with the greatest liberality. Now the Right Sage prince, leaving his own country, has settled with his followers in Honan, in opposition to all that is right ; so that in passing to and fro, they have entered the stockades, taken captive and killed the officers and soldiers, invaded the barbarians of the Shang-keun stockades, thus rendering their ancient locations untenable ; while the officials on the borders have taken to

⁵⁰ This act of insubordination on the part of Chin-he must have been previous to the one above-mentioned.

marauding adventures, and have become most intractable and unprincipled ; and the treaty is set at nought." He then dispatched the border officials with carriages and eighty thousand cavalry to Kaou-noo ;⁵⁷ and sent the general Hwan-ying to attack the Right Sage prince, who fled beyond the stockades. The emperor at the same time proceeded to Tae-yuen.

IV.

The Chinese monarch, however, was suddenly diverted from this enterprise, by the news that the State of Tse-pih had broken out in rebellion ; so that it was necessary to recall Hwan Ying's army, and hostilities against the Heung-noo were for a time suspended.

The next we hear of the latter is in the year 176, when the Shen-yu resolved on a despatch to the Emperor, to the following effect :—"The Great Shen-yu, by the will of God ruler of the Heung-noo nation, respectfully salutes the Emperor of China. Formerly your Majesty was pleased to express your gratification on the conclusion of a treaty of peace and amity. In the same spirit, the Right Sage prince bore without complaint the menacing insults of the Chinese officials on the border ; till the matter assumed such dimensions, that it became a question of deliberation by Nan-che the Marquis of E-leu and others, how to avoid a breach of the treaty and maintain the fraternal relations. Once and again letters of remonstrance were received from Your Majesty ; but when I despatched an envoy with a reply, he did not return, nor was there any messenger from Your Majesty, while the case was treated by you as a *casus belli*. Now in consequence of a slight breach of the treaty by some petty officials, you pursued the Right Sage prince till he was driven westward into the territories of the Yeu-te. There, however, Heaven favoured our cause : our officers and troops were loyal and true ; our horses were strong and spirited ; and by slaughter, decapitation, subjugation and pacification, our army effected the complete reduction of the Yue-te ; while Low-lan,⁵⁸ Woo-sun,⁵⁹ Hoo-kee and the adjacent kingdoms, to the number of twenty-six in all, without exception, submitted to the Heung-noo ; and thus all the bowmen nations are united as one family. Having also tranquillized the northern lands, we are now desirous that there should be a cessation of hostilities, and that the troops should send their horses to pasture. Let the past be forgotten and the treaty renewed ; that the people

⁵⁷ The present district of Gan-sih in Shen-se, N. lat. 36 deg., 48 min., E. long. 106 deg., 53 min.

⁵⁸ A country lying on the West of China, known also by the name of Shen-shan.

⁵⁹ A country lying on the north of the Teen shan range

on the borders may enjoy peace as it was in the days of old ; and so the young may attain to maturity, the aged may live unmolested, and uninterrupted happiness prevail from age to age."

About the same time, the Chinese Emperor would seem to have been troubled with some suspicions regarding the Heung-noo, and despatched the commissioner Ke Hoo-tseen with a letter, in which he requested the Shen-yu to send him a camel, two riding horses and two studs of carriage horses. Uneasy about the approach of the Heung-noo to the stockades, he ordered all the officials and people dwelling on the borders to remove their habitations to a considerable distance. The Shen-yu on his part, complied with the Emperor's request, and sent forward the offerings with the above epistle. On the arrival of the missive at the Chinese court, during the summer of 175, a consultation was held to discuss the expediency of attacking the Heung-noo or renewing the treaty of peace with them. Peaceful counsels prevailed ; it was the general opinion that the Shen-yu having just acquired the prestige of victory over the Yue-te, it would be impolitic to make an attack on them then. Besides, it was argued by some that the conquest of the Heung-noo territory would be of little advantage to China ; the waters were salt and the country uninhabitable ; so that the far wiser method would be to renew the treaty. The Emperor acceded to the suggestion.

Consequent on these deliberations, the following year an envoy was despatched to the Heung-noo with a letter to this effect :—"The Emperor of China respectfully salutes the Shen-yu of the Heung-noo. The envoy Ke Hoo-tseen has brought me a letter, in which you say that you are desirous that there should be a cessation of hostilities, that the past should be forgotten and the treaty renewed, that the people on the borders may enjoy peace, and uninterrupted happiness prevail from age to age. All this has my perfect approbation, being in accordance with the policy of the sage Monarchs of ancient times. When China entered into a fraternal treaty with the Heung-noo, the Shen-yu was treated with the greatest liberality. The breach of the treaty and the interruption of amicable relations has always been on the side of Heung-noo. But the trespass of the Right Sage prince having already been pardoned, I will not now accumulate reproaches. If you really entertain the feelings expressed in this letter, let strict injunctions be given to all your officers, to beware of breaking the treaty in future, and that they manifest fidelity and respect in accordance with the tenor of your epistle. We hear from the envoy, the great merit you have acquired by your military enterprises, in subjugating the nations : and in recognition of your arduous achievements, I

now beg to present you with a light figured lining imperial embroidered robe, a light long embroidered tunic, and a light variegated gown; also a golden hair comb, a gold ornamented waist-belt, and a buffalo-horn belt fastening; also ten pieces of twilled silk, thirty pieces of variegated silk, and forty pieces, each of carnation satin and green silk." These articles were then handed over to the proper functionary, who caused them to be conveyed to the Shen-yu.

In the 10th month of this year, Maou-tun died, and was succeeded by his son Ke-yuh, who assumed the title of (*Laou-shang*) "Venerable high" Shen-yu. On his accession, the Emperor Wan-te, following up the example and policy of his ancestor, sent a princess of the imperial house for a consort to the newly-elevated chieftain, and appointed the eunuch Chung-hing Yue to escort her to her new home. Yue would fain have excused himself, but the monarch overruled all his objections. "If I am compelled to go," he said, "it will be an unfortunate day for the house of Han." On reaching the Heung-noo camp, Yue, having resolved to make good his words, tendered his submission to the Shen-yu, who became much attached to him. The confidence thus established ensured to Yue a certain liberty of speech; and when he saw the Shen-yu giving way to a fondness for the dress and the food of China, he did not fail to raise a warning voice, and thus addressed his chief:—"The entire Heung-noo population is not equal to that of one Chinese province; but one cause of their strength is the simplicity of their dress and food, in which they are independent of China. Now should your Highness change the national customs, and introduce a taste for Chinese luxuries, while the supply of these are only sufficient to meet about one fifth of the requirements, the Heung-noo will all go over to the Chinese. Suppose your people were clothed in Chinese silk, in riding about among the thorns and brushwood, their robes and tunics would be unavoidably torn and destroyed; and it is evident that for strength and durability they are not to be compared to good skin garments. It will be wise also to give up Chinese table delicacies, which are neither so convenient nor so wholesome as good milk and cream." Yue also instructed the officers of the Shen-yu in the art of keeping records, in order that they might preserve a register of the people and the cattle. When the Emperor of China sent a letter eleven inches in length, inscribed:—"The Emperor respectfully salutes the Shen-yu of the Heung-noo," with the presents and complimentary expressions, Chung-hing Yue induced the Shen-yu to send a return letter twelve inches long, with a larger and longer seal, and audaciously worded:—"The great Shen-yu of the Heung-noo, the offspring of heaven and earth, ordained by the

sun and moon, respectfully salutes the Emperor of the Han," with the usual presents and complimentary expressions. When the Chinese envoy disparagingly remarked that the Heung-noo were wanting in their duty towards the aged, Chung-hing Yue replied :—" You Chinese employ agricultural troops to defend the borders ; but when they are sent on a military expedition, so miserably are they found in necessities, is it not a fact that their aged parents deprive themselves of their warm clothing and comforts to supply their sons with requisite food during the campaign ? " The envoy assented, and Yue continued :—" The Heung-noo make war the business of life. The aged and infirm being unable to fight, the choice food is given to the healthy and robust, that they may be able to stand the fatigues of the camp. Thus father and sons are helpful to each other. How then can you say that the Heung-noo are wanting in their duty towards the aged ? " Continuing the discussion, the envoy remarked :—" Among the Heung-noo, father and son sleep in the same cabin. When the father dies, the son takes the mother to wife. When a brother dies, his widow is taken by a surviving brother. They neither wear cap nor sash, and know nothing of the rites of the entrance-hall or the guest-chamber." " As to that," replied Yue, " the Heung-noo live on their flocks and herds, and clothe themselves with the skins. The flocks being dependent on the herbage and water, it is necessary, from time to time, to remove to fresh localities. Hence, in time of danger, the men practice equestrian archery ; and in the seasons of security, they live at ease and free from care. They have few restraints, and are unembarrassed by conventional forms. The intercourse of prince and subject is simple and durable ; and the government of the nation is consolidated as that of a single body. When a father or elder brother dies, the son or younger brother takes the widow to wife, as they abhor the mixture of families. Hence although there are disorders among the Heung-noo, yet they preserve the family stem untainted. Now in China, though they do not openly take the widows of their fathers and brothers to wife, yet while matrimonial etiquette requires more distant alliances, this is a fruitful source of murders ; and even the change of the surname frequently arises from this custom. Then as to defects in the rites, the ill-feeling that is generated by stringency in the intercourse between superiors and inferiors is such that it may be said, by the time the edifice reaches the summit, the strength of the builders is utterly exhausted. The husbandman spends his force in the labours of tillage and mulberry culture, to procure a supply of food and clothing ; and you build cities and outposts for self-defence. But in time of danger the people are not trained to warlike exercises ; and in time of peace every one

is taken up with his own business. Pshaw! people living in mud huts, with but half a costume and scarcely the power of intelligible speech, what have they to do with caps!" After that when the envoy wished to discuss the merits of Chinese civilization, Yue abruptly cut him short, saying:—"Let not the Han envoy spend his words. The presentation of silks and grain from the Han to the Heung-noo is merely a clever device to estimate their numbers. Nor are these gifts in themselves without their drawbacks. On the contrary, when the grain is ripe, it is trodden down by mounted troops, and there is an end of their harvest, much misery and distress being the natural result." Yue continued assiduously day and night to instruct the Shen-yu in the principles of political economy.

A few years of comparative peace followed, till B.C. 166, when the Shen-yu at the head of a hundred and forty thousand cavalry entered Chaou-na by the Seaou barrier, killed Sun Ngang the commandant of Pih-t'e, and carried off a great number of the people and cattle. He then advanced on Pang-yang,⁶⁰ whence he sent his mounted troops to set fire to the Hwuy-chung palace.⁶¹ On the return of his cavalry from this expedition, he marched on Kan-tseuen⁶² in the department of Yung. Wan-te on his part was adopting measures to meet the emergency. The high official Chang Woo was gazetted as general, with a force of a thousand chariots, and a hundred thousand cavalry troops, distributed over the Chang-gan region, to ward off the Hoo banditti. Lew King the Marquis of Chang was appointed territorial general of Shang-keun; Wei Suh Marquis of Ning, as general of Pih-t'e; and Chow Tsaou Marquis of Lung-leu, as general of Lung-se. Chang Seang-joo Marquis of Tung-yang was made general in chief, and Tung Hih Marquis of Ching, general of the vanguard. Under this leadership, a vast levy of carriages and cavalry set forward to attack the Hoo.

The Shen-yu was more than a month inside the stockades, but he retired on the approach of the Chinese army, and the troops of Han returned, without a blow having been struck.

The Heung-noo were becoming daily more overbearing; every year they crossed the boundary, killing and carrying off the people and cattle in immense numbers; more especially in Yun-chung and Leaou-tung; and up to the region of Tae, there was a loss in all of more than ten thousand persons. The Chinese being exceedingly distressed by these proceedings, an envoy

⁶⁰ An ancient city somewhere near the site of the present Chin yun, N. lat 36 deg., 03 min., E. lon. 107 deg. 03 min.

⁶¹ A palace built by the emperor Woo-te, forty miles west of Yung-heen, or the present Fung-tseang-foo city.

⁶² This city still exists, about 300 *le* distant from the capital of Shen-se, being the site of a palace built by Che-hwang, the book burner.

was despatched with a letter to the Heung-noo chief. The Shen-yu sent a Tang-hoo with a return letter acknowledging favours, and power to discuss the renewal of the treaty.

In 162 the Emperor again addressed a letter to the Shen-yu in the following terms:—"The Emperor of China respectfully salutes the great Shen-yu of the Heung-noo. Your highness having sent a Tang-hoo, the Tseay-ken Teaou-nan, and the Gentleman-usher Han-Leaou, with two horses, these I have respectfully received. When my imperial predecessor erected the Great Wall, all the bowmen nations on the north were subject to the Shen-yu; while the residents inside the wall, who wore the cap and sash, were all under our government: and the myriads of the people, by following their occupations, ploughing and weaving, shooting and hunting, were able to provide themselves with food and clothing. No separations took place between fathers and sons; while princes and subjects lived together in peace, free from violence and oppression. Now it is reported that there are certain disreputable people, who seeking to free themselves from their obligations, have turned their back on their duty as subjects and abandoned the treaty; disregarding the welfare of the people, and ignoring the condition of harmony between the two princes. But these are now matters of the past. Your letter says:—"The two nations being now at peace, and the two princes living in harmony, military operations may cease, the troops may send their horses to graze, and prosperity and happiness prevail from age to age, commencing, a new era of contentment and peace.' That is extremely gratifying to me. The sages practised daily renovation, renewing their reformatations and beginning afresh; giving rest to the aged and causing the young to attain maturity, each fulfilling his responsibility and completing his allotted span of life. Should I, in concert with the Shen-yu, follow this course, complying with the will of heaven, then compassion for the people will be transmitted from age to age, and extended to unending generations, while the universe will be moved with admiration, and the influence will be felt by neighbouring kingdoms inimical to the Chinese or the Heung-noo.

"As the Heung-noo live in the northern regions, where the cold piercing atmosphere comes at an early period, I have ordered the proper authorities to transmit yearly to the Shen-yu, a certain amount of grain, gold, silks of the finer and coarser kinds, and other objects. Now peace prevails all over the world; the myriads of the population are living in harmony, and I and the Shen-yu alone are the parents of the people. On taking a retrospect of the past, I find trifling matters and minute causes have shaken the stability of subjects,

and induced defective allegiance ; all quite unworthy to mar the harmony that ought to exist between brethren.

“I have heard that heaven is not partial in its overshadowing, nor is earth one-sided in its supports. If you and I both forget the trifles of the by-gone, and walk together in the broad path, regardless of the evils that are past, uniting the people of the two nations as the children of one family, the great mass of the population will be blessed with peace and prosperity, while they will be preserved from perils ; and the benefits will extend even to the lower creation, the denizens of the forest, the ocean and the firmament. Hence, in the future, let us not merely walk in the way of heaven, but overlook all that is past. I will freely pardon all my subjects who have run away or been carried captive ; and let not the Shen-yu seek the rendition of Chang-ne and others who have submitted to the Han. It is said that the ancient kings and emperors made clear stipulations in the treaties, and were ever true to their words. Let your highness ponder well. After the conclusion of the treaty of peace throughout the world, take notice, the Han will not be the first to transgress.”

The Shen-yu having ratified the treaty, the emperor notified the recorder, saying :—“The great Shen-yu of the Heung-noo has transmitted to me a letter signifying that the treaty of friendship is now settled. Let no man dispute the benefits either personally or as to territory. The Heung-noo shall not come within the stockades ; Chinese subjects shall not pass beyond the stockades. Death is the penalty of transgression. Thus friendly relations may be long continued without a breach. I have sanctioned it ; let it be widely circulated through the empire, that the matter may be clearly understood.”

In 160, Laou-shang Shen-yu died, and was succeeded by his son Keun-shin Shen-yu, to whom Chung-hing Yue renewed his oath of allegiance, and the treaty of friendship with the Chinese was also renewed. The new chief, however, had been little more than a year in power, when the treaty was thrown to the winds, and he poured thirty thousand cavalry into Shang-keun, and a similar force into Yun-chung, killing and taking captive immense numbers of the people. Three Chinese generals were thereupon appointed, and the formation of military colonies was initiated. Chang-woo was entrusted to establish a colony in Pih-te ; Soo-e held a similar commission for Kow-choo in Tae ; and Meen was appointed to form a colony at Fei-hoo-kow in Chaou ; while every assailable point on the borders was strengthened to repel the Hoo invaders. Three other generals were appointed to important military posts ; Chow A-foo was placed at Se-lew, to the west of Chang-gan ; Sew-le at

Keih-mun ; and Lew-le at Pa-shang, both posts on the north of the river Wei, to keep back the Hoo at those points. When the Hoo cavalry crossed the border at Kow-choo in Tae, the news was telegraphed to Kan-tseun and Chang-gan by beacon fires. It was a matter of months by the time the Chinese troops reached the border. The Heung-noo were already far away beyond the stockades, and the Chinese expedition came to an end.

In the summer of 157, the Emperor Wan-te died, and was succeeded by his son King-te. Scarcely had the new prince ascended the throne, when disaffection began to manifest itself among the feudal states. Suy the king of Chaou sent a messenger secretly to enter into communication with the Heung-noo. Woo and Tsou rebelled, and wished to unite with Chaou in a plot to invade the border. The emperor however surrounded and disabled Chaou ; while the Heung-noo declined to join the confederation. Amicable relations were renewed between the Shen-yu and the Chinese court. A treaty was again signed, and a market was opened at the barrier. Presents were forwarded to the Heung-noo, and an imperial princess was sent to cement the alliance with the Shen-yu. The treaty was tolerably well observed throughout the reign of King-te ; towards the close there were some petty incursions on the borders, though there was no serious raid.

Woo-te ascended the throne in 140, the early years of his reign being marked by occasional irruptions of his northern neighbours. In 135, however, they requested a renewal of the treaty of peace, which was agreed to by the emperor after some deliberation, and an explicit declaration as to the stringency of the stipulations. The Heung-noo were treated liberally ; the market at the barrier was continued, and handsome gifts were forwarded ; so that from the Shen-yu downwards, the Heung-noo all became firmly attached to the Chinese, and confined their excursions to the outside of the Great Wall. An influence in an opposite direction, however, was at work at court, and within two years of the signing of the treaty a deep laid plot was set on foot by the Chinese, for cutting off the great body of the Heung-noo. Nee Yih, an old man, a native of Ma-yeh, was sent as it were clandestinely to negotiate with the Shen-yu. He pointed out to the latter the wealth that might be obtained by the capture of Ma-yeh, and pretended to sell the city to him. Allured by the prospect of gain, and trusting to the representations of Nee, the bait began to take. The Shen-yu entered the Woo-chow stockade with a hundred thousand mounted troops, while the Chinese had more than three hundred thousand troops lying in ambush in a valley near Ma-yeh. The high dignitary

Han Gan-kwo was general of the covering force, to protect the four generals who were to draw the Shen-yu into the ambushade. When then Shen-yu had entered the Chinese stockade, before he was within a hundred *le* of the Ma-yeh, he was astonished to see the cattle spread over the hills and no one to look after them. He attacked a military post, which was defended by the Commandant of Yed-mun, who happened to be then making his circuit. The latter was captured by the Shen-yu, who was about to run him through; but to save his life, he revealed the Chinese plot. At this revelation the Shen-yu became greatly alarmed, and exclaimed:—"Truly I expected something of this kind." He then drew off his troops, and returned, remarking,—"It was providential that I met with this commandant." He designated the commandant a heavenly king. The Chinese troops having confidently reckoned on the Shen-yu entering Ma-yeh, had relaxed their vigilance; but as he did not come, their scheme proved a great collapse. Discovering the state of matters, the general Wang Kwei led forward his forces beyond Tae, intending to overtake and capture the Heung-noo store waggons; but on hearing that the Shen-yu had returned, the greater part of the troops refused to proceed. Considering that Wang Kwei was the originator of this plot, and now having failed to follow up the fugitives, he was condemned to death by the emperor. From that time the treaty was abandoned by the Heung-noo, who attacked the stockades on the high road, and were constantly committing acts of brigandage on the border, too numerous to mention. They were very glad, however, to avail themselves of the market at the barrier, having become fond of Chinese commodities; and the Chinese were very desirous to cultivate this barrier traffic, as a means of enfeebling their rivals.

Since the failure of the military *ruse* at Ma-yeh, the Heung-noo had made themselves especially obnoxious to the Chinese by their perpetual raids; and it was on occasion of an incursion on the Shang-kuh region, in 129, that the Chinese resolved on a grand and simultaneous attack, under the conduct of four of their ablest generals, each at the head of ten thousand horsemen. The Barrier general, Wei Tsing, sallied forth from Shang-kuh pursued the Hoo as far as Lung-ching (the Dragon city), and killed and captured seven hundred of the enemy. Kung-sun Ho followed up the chase beyond Yun-chung, but without success. Kung-sun Gaou issued from the Tae region, but was defeated by the Hoo, with a loss of more than seven thousand men. Le Kwang advanced from Yen-mun, but was defeated and taken prisoner by the Hoo; from whom he made his escape by a stratagem. Kung-sun Gaou and Le Kwang were imprisoned

on account of their failure, and condemned to death. The penalty was commuted, however, and they were shorn of all official rank. In the winter of the same year several thousands of the Heung-noo were engaged in depredations on the border, especially at Yu-yang. The general Han Gan-kwo was in consequence sent to establish a military colony there, with a special view to ward off these disasters.

The following autumn twenty thousand Heung-noo horsemen entered the Chinese territory, killed the governor of Leaou-se, and took more than two thousand prisoners. They afterwards defeated the garrison of Yu-yang, killing and taking over a thousand men, where they surrounded Han Gan-kwo with a like number of retainers. The Chinese general was reduced for a time to the greatest extremities, till assistance arrived from Yen⁶³ when the Heung-noo made off. They then entered Yen-mun, where they killed and captured more than a thousand people. Wei Tsing went to meet them at Yen-mun, with a force of thirty thousand horsemen; while Le Seih attacked them from Tae, and succeeded in killing and capturing several thousands.

Next year Wei Tsing again organised an expedition against these nomades, whom he pursued from Yun-chung as far as Lung-se. He attacked the Pih-yang King of the Low-fan on the south of the Yellow river; killed and captured several thousand of the tribe, and carried off more than a million sheep. The Chinese having thus gained possession of all the land south of Suh-fang⁶⁴ restored the ancient stockades first erected by the Ts'in general, Mung-teen; taking advantage of the Yellow river as a natural defence on the west. They abandoned the district of Tow-pieh in Shang-kuh to the Heung-noo, and built the city of Yang-t'e.

In the early part of the year 126, Keun-shin Shen-yu died, when the rightful succession of his son and heir Yu-tan was contested by his uncle the Left Kuh-le prince, E-che-seay. In the strife that ensued, Yu-tan being defeated, fled to China, swore allegiance to the emperor, and was created Marquis of Poo-gan. He died not many months after the event. The claims of E-che-seay being then undisputed, he was acknowledged Shen-yu in the summer of the same year. The complimentary policy of the Chinese being now at an end, the commencement of the new chief's reign was signalised by an irruption into Tae of several tens of thousands of Heung-noo cavalry, who killed the governor Kung Yew and took over a

⁶³ An ancient state occupying the site of Shun-teen-foo, the present metropolitan prefecture of China.

⁶⁴ On the site of the present prefectural city of Ning-hea, N. lat. 38 deg., 32 min., 40 sec.; E. long. 106 deg., 07 min., 32 sec.

thousand captives. In autumn they made a similar raid in Yen-mun, where they killed and captured more than a thousand people.

Next year they again entered Tae, Ting-seang,⁶⁵ and Shang-keun, with thirty thousand cavalry in each place, on which occasion they killed and captured several thousand persons. The Heung-noo Right Sage prince, irritated against the Chinese for seizing the country south of the Yellow river and building Suh-fang, made several brigandish raids on the border, and entering the territory in question, attacked and harassed Suh-fang, killing and capturing vast multitudes of the officials and people.

In the spring of 124 Wei Tsing was sent with a force of more than a hundred thousand, to endeavour to put a stop to these irruptions. Six generals were in command under Wei, and the greater part of the army issued by the Kaou-keue stockade in Suh-fang district. The Right Sage prince, secure in his belief that he was beyond the reach of the Chinese, had given himself up to excess of wine; but the Han troops pushing forward six or seven hundred *le* beyond the stockade, managed to surround him at night in his encampment. Becoming aware of his position, he saw that no time was to be lost, and by a resolute effort broke through the cordon and made his escape to the north, followed by some of his choicest cavalry. Meanwhile the Chinese captured ten or more of the Heung-noo petty princes and upwards of fifteen thousand men and women. In autumn ten thousand Heung-noo cavalry made a raid on the Tae region, killed the governor, Choo Ying, and carried off more than a thousand people.

The following spring the Commander-in-chief Wei Tsing conducted an expedition on the largest scale, with a mounted force of upwards of a hundred thousand, under the leadership of six of China's most distinguished generals. Advancing from Ting-seang, at a distance of several hundred *le*, they came upon the Heung-noo, when a great carnage ensued, and from first to last the latter lost over nineteen thousand killed and captured. The Chinese also lost two generals and more than three thousand of their cavalry. Soo Keen, the general of the Right, managed to escape; but Chaou Sin the Marquis of Heih, the general of the Van, being in command of ill-disciplined troops, was less fortunate. Falling into the hands of the Heung-noo, he tendered his submission. Chaou Sin was originally the Heung-noo petty prince of Ming, but went over to the Chinese, by whom he was created Marquis of Heih. The generals of the Van and the

⁶⁵ An ancient district of which the city stood 350 *le* north of the city of Shen-yeng.

Right, having led forward their troops together by a different route, fell in with the Shen-yu's army and were cut to pieces. The Shen-yu testified his satisfaction at having regained the Marquis of Heih by making him a Regulo, next in rank to himself, while he gave him his own sister in marriage. Naturally the question of Chinese politics was much discussed, and at the instigation of Chaou Sin, the Shen-yu removed his camp north as far as the sandy desert, in order to deceive the Chinese, and induce them to relax their military vigilance; hoping thereby to be able to take advantage of their weak points, without going near the stockades.

In 122 some tens of thousands of Heung-noo horsemen entered Shang-kuh, and killed several hundred people.

In the spring of 121 Ho Keu-ping, a youth of eighteen, the nephew of Wei Tsing, was put in command of ten thousand troops, with the title of Light-horse general. Leaving Lung-se with this army, he passed Yen-ke mountain⁶⁶ for a distance of upwards of a thousand *le*, and in the course of six days' fighting, killed and captured upwards of eight thousand of the enemy and carried off the prince of Heu-choo's⁶⁷ gold idol⁶⁸. In summer the Light-horse general, accompanied by the Marquis of Ho-ke, led several tens of thousands of cavalry from Lung-se north for two thousand *le*, passed the Ken-yen lake, and attacked the encampment at Ke-leen⁶⁹ mountain; where they killed and captured more than thirty thousand, including the petty prince of Pe,⁷⁰ and some ten lesser dignitaries. About the same time, the Heung-noo made a raid on Yen-mun in Tae, killed and captured several hundred people. The Chinese Commissioner, the Marquis of Po-wang, accompanied by the general Le Kwang, left Yew-pih-ping and made an attack on the Heung-noo Left Sage prince. The latter, however, surrounded Le; and of his four thousand followers, more than half died. There were an extraordinary number also killed and taken captive, till the troops of the Marquis of Po-wang came to the rescue. General Le himself made his escape, having lost the whole of his troops.

⁶⁶ This mountain lies 50 *le* to the south-east of the present Shan-tan, district city in Kan-sub.

⁶⁷ One of the Heung-noo dependent princes.

⁶⁸ This is said by the commentators to have been a Buddhist idol; and it is remarkable as one of the earliest instances on record of idolatry in the east. The head-quarters of Heung-noo worship was in former times at the foot of the Kan-tseuen mountain, 90 *le* to the north-west of the prefectural city of Yun-yang, the site of which was in the western part of the present prefecture of Se-gan in Shen-se; but when they were expelled from this territory by the troops of Ts'in, they removed their idol and sanctuary north, to the territory of Heu-choo.

⁶⁹ Ke-leen is said to be the Heung-noo word for "heaven."

⁷⁰ This was also one of the dependent princes of the Heung-noo.

The Marquis of Ho-ke and the Light-horse general gave their opinion that Le and the Marquis of Po-wang should both be sentenced to death, for their disgraceful failure; but the Emperor was pleased to pardon them, at the same time depriving them of all rank and dignity. In autumn, the Shen-yu, irritated at the great slaughter of the people by the Chinese in the territories of Kwan-ya and Heu-choo, determined to put to death the kings of these two states. The two princes, however, getting wind of the Shen-yu's intention, resolved to submit to the Chinese. An embassy, becoming the occasion, conducted by the Light-horse general, was sent to meet them. When it came to the point of action, the prince of Heu-choo, seems to have been troubled by some movements of conscience, and showed an inclination to draw back; but the question was decided by Kwan-ya, who put the other to death, united the retainers of Heu-choo to his own, and with the whole body, over four thousand in number, made his way to the capital, and tendered his allegiance to the emperor of China. The territory of Kwan-ya having thus become annexed to the Chinese empire, the raids of the Hoo in Lung-se, Pih-te and Ho-se⁷¹ became much less frequent. The poor people from Kwan-tung were removed to populate the newly acquired Heung-noo lands to the south of the Yellow river; and the frontier guards from Pih-te westward were reduced to half the number.

The following spring the Heung-noo made incursions in Yew-pih-ping and Ting-seang, several tens of thousands of horsemen in each, killing and capturing more than a thousand people.

In the spring of 119 a council was held to deliberate on the state of the Heung-noo question. It was observed that the Shen-yu was acting under the advice of Chaou Sin the Marquis of Heih, in removing his camp to the north of the sandy desert, under the impression that the Chinese troops could not follow them up there. Now the Chinese resolved to disabuse them of that idea; for which purpose they raised a force of a hundred thousand cavalry, and including the baggage bearers they mustered altogether a hundred and forty thousand horses besides the commissariat department. The conduct of the expedition was equally divided between the Commander-in-chief Wei Tsing and the Light-horse general Ho Keu-ping. The Commander-in-chief started from Ting-seang, and the Light-horse general from Tae, it having been previously arranged that they should make a joint attack on the Heung-noo in the sandy desert. The Shen-yu being informed of the Chinese movement, removed his *impedi-*

⁷¹ On the site of the present district of Shin-muh, of which the city is in N. lat. 38 deg., 55 min., 30 sec.; E. long. 110 deg., 06 min. Ho-se signifies "west of the river," a name corresponding to its actual position on the inner bank of the eastern limb of the great bend of the Yellow river.

menta to a distance, and with the choicest of his troops waited the arrival of the Chinese commander on the north of the desert. A fierce contest ensued, which lasted a whole day, until the evening, when a high wind springing up raised one of those dust storms that completely obscured the vision of the belligerents. The Chinese were not idle however, but deployed their right and left wings, and surrounded the Shen-yu. The latter was anxious to give battle, but could not get an engagement with the Han troops; so with merely a few hundred sturdy cavaliers he broke through the Chinese cordon and fled to the north-west. The Chinese troops pursued him at night but could not come up with him, although they killed and captured nineteen thousand of his followers. Pushing northward as far as Chaou Sin's city, at the Teen-yen mountain without success, they returned. In the flight of the Shen-yu a number of the Chinese soldiers got mixed up with his followers, and thus shared his fortunes. After this flight, nothing having been heard of the Shen-yu for a long time by the great body of his people, the belief was gaining ground that he was dead; and acting on this impression the Right Kuh-le prince assumed the supreme power. But when the old Shen-yu returned to his people, he was cordially received, and the Right Kuh-le resigning all claim, returned to his former rank. Advancing over two thousand *le* beyond Tae, the Light-horse general fell in with the Left Sage prince, when a battle ensued, in which the Chinese killed and captured more than seventy thousand people. The prince and his generals all took to flight. The Light-horse general went on to Lang-keu-seu mountain, where he made an offering to the spirits; he presented a sacrifice at the Koo precipice, took a view of the Han lake, and then returned. From this time the Heung-noo removed to a greater distance from China, and the chief's encampment was never afterwards pitched to the south of the sandy desert. From Suh-fang the Chinese crossed the Yellow river, spreading westwards, gradually appointing territorial officers, with subordinate officials and soldiers to the number of fifty or sixty thousand, and constantly encroaching till they were north of the Heung-noo boundary. From the first, when the two Chinese generals surrounded the Shen-yu, the latter lost altogether some eighty to ninety thousand of his people; while the Chinese lost considerably over ten thousand and more than a hundred thousand horses. Altogether the Heung-noo were sorely reduced, yet they removed to so great a distance that the Chinese horses were now too few to follow up the pursuit. In the emergency to which he was now driven, the Shen-yu, acting on the advice of Chaou Sin, sent an envoy with fair words to the Chinese court, to ask for a treaty of peace. The Emperor laid the matter before his

ministers for consultation. Some recommended a treaty; but others gave their opinion that the Heung-noo should be received as subjects. The high minister and senior historiographer, Jin Chang, said: "The Heung-noo are recently reduced, it will be well to make them extraterritorial subjects, and let them pay court at the borders." Jin's counsel was approved, and he was himself appointed the envoy to carry this decision to the Heung-noo camp. On hearing Jin's proposal, the Shen-yu was greatly enraged, and detained him, nor did he deign to send a reply. On a previous occasion one of the Heung-noo envoys had tendered his submission to the Chinese Emperor, and the Shen-yu now held the Chinese envoy as a hostage for the other.

Scarcely had the last of the Chinese army returned from their arduous campaign, when the Light-horse general Ho Keu-ping died, in the autumn of B.C. 117, after which there was a cessation of hostilities for several years.

After a reign of thirteen years E-che-seay Shen-yu died in 114, and was succeeded by his son Woo-wei.

Towards the close of the following year the Emperor resumed the ancient practice of making a tour of inspection through the provinces. At the same time troubles supervened in the south, and expeditions were organised against the states of Southern⁷² and Eastern Yue,⁷³ to chastise them for the refractory posture they had assumed. The result was that the territories of these two princes were added to the Empire in the year 111. The attention of the Chinese was diverted from the Heung-noo during these movements, and they had been comparatively free from any attacks by the latter. The return of leisure, however, reminded them of the necessity of vigilance in regard to their old enemies. Kung-sun Ho, the Master of the Horse, was put in charge of five thousand cavalry, with which force he advanced as far as the Fow-tseu Wells, more than two thousand *le* beyond Kew-yuen,⁷⁴ without meeting a single Heung-noo. Chaou Poonoo, the Marquis of Tsung-peaou, with a force of upwards of ten thousand horsemen went to the Heung-noo river, several thousand ⁷⁵ *le* beyond Ling-keu,⁷⁶ but returned without seeing any signs of the tribe.

Towards the close of the following year the Emperor, in mak-

⁷² Southern Yue comprised the province of Kwang-se, part of Kwang-tung, the island of Hae-nan and Cochin-China.

⁷³ Eastern Yue comprised the eastern part of Kwang-tung and the seaboard provinces of Fuh-keen and Che-keang.

⁷⁴ The present prefecture of Yu-lin, at the Great Wall. The city is in N. lat. 38 deg., 18 min., 18 sec.; E. long. 110 deg., 22 min., 30 sec.

⁷⁵ The commentary says one thousand *le*, which seems the more probable version.

⁷⁶ The present prefecture of Kan-chow in Kan-suh province. The city is in N. lat. 39 deg., 0 min., 40 sec.; E. long. 100 deg., 56 min.

ing the tour of the boundaries, arrived at Suh-fang, where he made a grand inspection of a hundred and eighty thousand cavalry. Having ascertained their military proficiency he sent the envoy Ko Keih to propose to the Shen-yu a meeting at the boundary. Arrived at the Heung-noo camp the Shen-yu sent formally to inquire his business. In a lowly posture and with humble address Ko replied that he would deliver his commission to the Shen-yu in person. Admitted to an audience Ko addressed the chieftain in the plainest terms to the following effect: "The head of the king of Southern Yue is at present suspended at the northern gate of the Chinese Empire. If the Shen-yu is disposed to measure arms with China, the Emperor is now at the head of his troops, and will wait his arrival at the boundary; but should your highness feel unequal to the challenge let me advise you without delay to bend your steps southward, and tender your allegiance to the Han. Why should you wander away to these desolate regions, and conceal yourself on the north of the sandy desert, perishing with cold in a land that can furnish neither water nor pasturage for your flocks and herds." At the conclusion of this address the Shen-yu was furious; he decapitated the guest-usher on the spot and detained Ko Keih. As a further degradation to the latter he transported him to the borders of the Northern Sea.⁷⁷ The Heung-noo did not deem it advisable at that time to attempt any further incursions on the Chinese borders, preferring to recruit the strength of their men and horses; while keeping up their efficiency by the practice of hunting and archery. Several times they sent envoys to China with plausible tales and fair words, requesting a treaty of peace. As a result of these applications Wang Woo was sent with special instructions to note their condition. Now it was a rule with the Heung-noo that unless an envoy would forego his national etiquette and have his face tattooed he could not be admitted into the grand tent of the Shen-yu. Wang Woo, who was a northern man, and well versed in Heung-noo customs, felt no scruple in complying with these conditions. Admitted into the grand tent he soon found his way into the good graces of the Shen-yu. The latter, during his intercourse with the Chinese, having learnt something of the art of dissimulation, sent Wang back with the false assurance that if they would consent to a treaty he would send his eldest son to the Chinese court as a hostage.

The Chinese were not indifferent to the above proposal, and in the course of the year 109 Yang Sin was sent on a mission to arrange with the Shen-yu about carrying it into effect. The course of events about this time was not such as to reassure the Heung-

⁷⁷ Lake Baikal.

noo chief. The Chinese had just subjugated the kingdoms of Hwuy-mih⁷⁸ and Corea on the east, and annexed these territories to the empire, while they had established the region of Tsew-tseuen⁷⁹ on the west, as a barrier against the incursions of the Hoo; and to afford facilities of intercourse with the Keang.⁸⁰ They had also opened up a caravan route to the kingdoms of the Massagetæ and Ta-hea.⁸¹ An imperial princess had moreover been bestowed upon the king of Woo-sun, one of the States subject to the Heung-noo, from whom the Chinese intended to transfer the allegiance to themselves. As a further means of effecting this they erected a stockade at Heuen-luy, considerably to the north; while the Heung-noo did not dare to offer any opposition. The same year Chaou Sin the Marquis of Heih died; and taking all these things into consideration the Chinese diplomatists, in view of the weakened condition of the Heung-noo, thought it a favourable time to get them to accept the relation of a subject nation. Yang Sin was firm, straightforward, and one who would not be diverted from his purpose; but hitherto he had not filled any high official post. When the Shen-yu coolly ordered him to enter, the latter refused to forego his national etiquette, whereupon the chief sat down outside the grand tent to give him an audience. Yang Sin opened his commission by stating that China was willing to enter into a treaty **on his proposed condition, that he should send his eldest son as a hostage.** The Shen-yu replied:—"Treaties were not so made in other days. Formerly it was the custom for China to send an imperial princess, with presents of raw and wrought silk, besides comestibles of various descriptions as a token of amity; and the Heung-noo on their part refrained from molesting the borders. But now it seems the ancient order is to be abandoned; and you wish me to send my eldest son as a hostage, without the hope of any equivalent. Besides, when China sends an envoy to the Heung-noo they are accustomed to send a man of high rank." At this point the literary attendant was about to offer a remark, but the chief abruptly cut short all discussion,

⁷⁸ A country upon the eastern borders of Corea, to the north of the Chin-han and east of the Ma-han. The people spoke the same language as the Coreans, and were of the same origin, and same manners and laws. (Doolittle's "Vocabulary and Handbook," vol. ii, p. 203.)

⁷⁹ The present prefecture of Suh-chow in Kan-suh, of which the chief city is in N. lat. 39 deg., 45 min., 40 sec.; E. long. 99 deg., 07 min.

⁸⁰ Ugro-tataric tribes in Tangut. (Smith's "Vocabulary of Proper Names," etc., p. 19.)

⁸¹ A country more than 2000 *le* to the S. W. of Ta yuen (Ta-wan), and identified by Biot with Bactria. This country was named after the Dahæ, a warlike tribe from the eastern shores of the Caspian, who invaded Bokhara and adjoining districts. (Smith's "Vocabulary of Proper Names," etc., p. 50.)

and the young man was terrified lest the chief should run him through. The Shen-yu continued :—"Whenever the Chinese troops have entered the Heung-noo territory, the latter have promptly sought reprisals for the injury. When the Chinese have retained the Heung-noo envoy, the Heung-noo have also retained the Chinese envoy, which is but a fair equivalent, and they desire no more on the present occasion." On the return of Yang Sin to China, reporting the ill success of his mission, Wang Woo was again despatched, to remind the Shen-yu of his promise. He was received by the latter with a profusion of fair words, intimating without disguise his desire for a good supply of Chinese objects, while the chief craftily observed to the envoy :—"It is my wish to go to China and have a personal interview with the Son of Heaven; thus to ratify the fraternal bond between us." When Wang Woo carried back this message to China a hotel of appropriate style was built for the reception of the Shen-yu in Chang-gan the metropolis. The Heung-noo chief, however, sent one of his nobles to China, and desired him to say that unless China sent an envoy of equal rank he would not discuss the question in earnest with him. While in the metropolis the Heung-noo envoy fell sick, and was put in the doctor's hands, but died under the medical treatment. Loo Ch'ung-kwo, stipendiary of 2,000 piculs, who wore the corresponding insignia, was appointed to escort the funeral home, with presents of thick silk to the value of several thousand taels. The Shen-yu declared the Chinese had killed the nobleman his envoy, and consequently detained Loo Ch'ung-kwo. It was now evident to the Chinese that the Shen-yu had been merely deluding Wang Woo with false pretences, and never had any idea of sending his son to China as a hostage.

After this the Heung-noo, on several occasions sent small parties of troops, to make incursions on the Chinese border. In view of these troubles, in the summer of 107, the Hoo-eradicating general Ko Chang and Chaou Po-noo the Marquis of Tso-ya, were commissioned to establish military colonies from Suh-fang eastward, to defend the borders against the Hoo raids.

In the autumn of 105 Woo-wei Shen-yu died, in the tenth year of his reign, leaving his son Woo-sze-loo a mere stripling, as his successor, who was always spoken of as the Boy Shen-yu. From this time the Heung-noo continued their migrations to the north-west. The left wing of their army was now in the meridian of Yun-chung, while the right wing was even with Tsew-tseuen and Tunhwang⁸². Soon after the accession of the Boy

⁸² Known in later times by the name of Kwa-chow. A district of the province to the south of Teen-shan. Latitude of chief place 40 deg., 15 min.; N. long. 93 deg., 50 min E. (Doolittle's "Vocabulary and Handbook," vol. ii, p. 551.)

Shen-yu, China sent two envoys, one ostensibly to condole on the death of the Shen-yu, and the other on the death of the Right Sage prince; though in fact their mission had a more sinister object. On reaching the Heung-noo they were conveyed to the Shen-yu, who was enraged, and caused them to be detained. From first to last there had been more than ten Chinese envoys detained by the Heung-noo; and a similar number of the Heung-noo detained by the Chinese.

The year 104 was signalised by the celebrated expedition of the Urh-sze general Le Kwang-le to chastise the kingdom of Ta-wan⁸³. At the same time the Yin-yu general Kung-sun Gaou

⁸³ This country, which lies on both sides of the upper course of the Jaxartes, was visited by the Chinese Buddhist pilgrim Heuen-chwang in the seventh century, and noticed by him under the name of Fei-han or Fergana, about a thousand *le* to the south of Tashkand. He says:—"It is surrounded by mountains on all sides. The soil is rich and fertile; it produces abundant harvests, and a profusion of flowers and fruits. The country is well adapted for rearing sheep and horses. The climate is cold and windy. The inhabitants are naturally firm and courageous; they have a peculiar language, and are physically of a low and ill-formed type" The oldest account we have of the country next to the Chinese, is by Ebn Haukal, an Arabian author of the tenth century, who says:—"Ferganeh is the name of an ample and fertile province, which contains many towns and villages; the capital is called Akhsiket; it is situated on a level ground, on a river; and has a kohendiz, and suburbs and a castle, etc." ("Oriental Geography," p. 270.) The province is now represented by the Khanate of Khokand.

Some explanatory details seem necessary to a right understanding of the importance of the movement here briefly alluded to. It may be remembered in the preceding narrative, the Yue-te or Getæ, or rather the Massagetæ, are spoken of as a flourishing nation in the third century before Christ, lying between the Chinese and Heung-noo on the west. These were the avowed enemies of the Heung-noo, and in the year 177, when the Right Sage prince was driven from his camp inside the bend of the Yellow river, he seems to have come into collision with the Massagetæ. The following year the Shen-yu tells the emperor they had effected the complete reduction of the Massagetæ, and that twenty-six adjacent kingdoms had all become subject to them. From another source we learn that the Heung-noo had killed the king of the Massagetæ, and made a goblet of his skull. Unable to resist their oppressors, and burning with hatred against them, the bulk of the nation moved westward to the neighbourhood of the Caspian Sea in 139, where they may possibly have united with some kindred tribe, and effected a settlement after having driven the Dahæ southward. These facts came to the knowledge of the Chinese, through some of the Heung-noo who had made their submission; and in order to renew their connection with the Massagetæ, by which means to cripple the resources of the Heung-noo, the emperor Woo-tee conceived the idea of an embassy to the former in their new country, as a preliminary to a regular intercourse. The general Chang Keen offered himself for the service, with a hundred men to accompany him on the expedition; and this mission was one of the first acts of this illustrious reign. As the route lay partly through Heung-noo territory, Chang Keen and his companions were stopped and detained. After ten years, however, vigilance was somewhat relaxed, and the Chinese envoy managed to make his escape with his party. A toilsome journey of several tens of days brought them to the kingdom of Ta-wan, where they were cordially received, and assisted on their way to the Massagetæ. Although the latter nation declined to acknowledge the supremacy of China, yet several of the kingdoms through which they had passed, had shown a readiness to throw off the

received a commission to build the Show-keang (*Surrender*) city. During the past winter the great rains and snow had been so severe in the Heung-noo country, that large numbers of the cattle had died from cold and starvation. The Boy Shen-yu, with the thoughtlessness of youth, took delight in killing and beating the people till a spirit of murmuring and insubordination became very prevalent. The Left Commandant General had formed a plot against the life of the Shen-yu, and with a view to put his plans into operation he secretly sent a messenger to China to signify his intention to kill the Shen-yu and then tender the allegiance of the nation to the empire of the Han. A difficulty that stood in the way, however, was the distance of the Heung-noo from China. "Let the army of the empire," he said, "come within a reasonable distance, and then we will openly proclaim our intention." On receiving this intimation of the state of feeling in the camp, the Chinese resolved to build the Surrender

Heung-noo yoke, on the understanding that they should be under the protection of China; and the token of their allegiance was to be perpetuated by the periodical transmission of tribute. Among the number of such kingdoms was Ta wan, which was famed for an unequalled breed of horses; and the regular transmission of some of these to China was to be the evidence of their continued loyalty. On the return of the Chinese general, he was again detained for a year by the Heung-noo; but during the intestine troubles consequent on the death of Keun-shin, Shen-yu in 126, and the disputed succession, he got away without much trouble, and returned to China with only one out of the hundred who had set out with him twelve years before. Although he had failed in the ostensible object of the expedition—to get the Massagetæ to submit to China—yet the amount of information he was able to collect, about the various nations through which he passed, turned out of the greatest advantage to China, and laid the foundation of that train of events, by which the power and authority of the Son of Heaven was acknowledged from the Korean peninsula to the banks of the Caspian.

One of the first fruits was the opening up of a regular caravan route from China across Central Asia. In the course of years, however, it appears the Heung-noo, by their greater proximity began to regain their influence; Ta-wan had omitted to forward the usual tribute of horses; the Chinese caravans yielded little or no profit; an Imperial envoy had been treated with indignity; and they had otherwise manifested a spirit of insubordination, to quell which the present expedition was set on foot. The preliminary arrangements had not been completed, when the sad reverses the Chinese had suffered at the hands of the Heung-noo led most of the Chinese statesmen to think it would be best to postpone the siege of Ta-wan till they had somewhat recuperated. Not so the emperor, however, who appears to have been the mainspring of the movement; for he remarked:—"If we cannot subjugate a small kingdom like Ta-wan, we shall lose the respect of the Dahæ, and all nations of like standing; while the supply of Ta-wan horses will be at an end." In order to recruit the diminished force, it was determined—1st. To release all able-bodied prisoners; 2nd. To enlist all young and capable vagabonds of the empire; and 3rd. To employ the cavalry at the frontier stations. By this means they managed to get together an army of sixty-thousand at Tun-hwang, besides the camp followers, with a hundred thousand oxen, thirty thousand horses, and considerably over ten thousand asses and camels as beasts of burden. With this force they commenced their journey, but before they reached Ta-wan, the troops were reduced to half the number.

city, outside the stockades, but still at a great distance from the Heung-noo camp, as an asylum for all those who should tender their submission.

Relying on the inducement held out by the Left Commandant General, Chaou Po noo the Marquis of Tso-ya left Suh-fang with twenty thousand cavalry in the spring of 103, and marched northward more than two thousand *le* to the appointed place of *rendezvous* at the Tseun-ke mountain⁸⁴. It was the intention of the Left Commandant General there to have made an open demonstration; but the Shen-yu, who had probably become aware of the plot before it was mature, had him put to death. The Heung-noo troops then advanced to meet the Marquis of Tso-ya; but several thousand of them were captured by the Chinese, who then turned their steps homeward. Ere they were yet within four hundred *le* of the Surrender City, however, they were surrounded by eight thousand Heung-noo cavalry. The Marquis of Tso-ya going out at night to search for water, was taken prisoner; and the Chinese, reduced to great straits, were unmercifully slaughtered by the Heung-noo. The Chinese now fearing that their leader was put to death, did not dare to think of returning; but electing a new commander, sought to maintain an independent position, and so were utterly cut to pieces by the enemy. The Shen-yu, highly elated with the result of this engagement, sent troops to attack the Surrender City; but being unsuccessful in that enterprise, they turned after making a raid on the Chinese frontier.

Next year, the Shen-yu headed an expedition in person to attack the Surrender City; but before reaching the place he was taken ill and died. The son of the boy Shen-yu being but an infant, he was succeeded in the chieftdom by his uncle Kow-le-hoo, the Right Sage prince, and younger brother of Woo-wei Shen-yu. On the accession of the new chief the Banqueting-house magnate Seu Tsze-wei was commissioned to raise a line of fortresses extending for several hundred *le* from the Woo-yuen stockade, and to build look-out towers along the road. At Lew-k'ee the extreme point, about a thousand *le* distant, the Guerrilla general Han Yue, and Wei-K'ang the Marquis of Chang-ping, were commissioned to establish a military colony; Loo Po-tih the Sturdy bowmen Commandant was commissioned

⁸⁴ According to one Chinese account, the Tseun-ke mountains lie north from Leang-chow; while another states that they are 2100 *le* north-west from Suh-fang. Guided by these indications, we find in the most recent Chinese Atlas, the "Hwang chaou chung wae yih tung yu t'oo," published at Woo-chang, about the place in question is a range named the O-ne-pih-keih mountains, about the head waters of the Selenga. D'Anville gives these by the Manchu name Hangai Alin. Possibly they may be the Annibæ montes of Ptolemy.

to build a settlement on the Kew-yen lake.⁸⁵ In autumn the Heung-noo visited Yun-chung, Ting-seang, Woo-yuen and Suh-fang in vast numbers, when they killed and captured several thousands of the people, besides committing a great destruction of the grain. They destroyed the fortresses and look-out towers that had been built by Seu Tsze-wei. The Right Sage prince also invaded Tsew-tseuen and Chang-yih, capturing several thousands of the people; but he was attacked and repelled by Jin Wan, with the loss of all that he had previously gained. About the same time news was heard of the arrival of Le Kwang-le, who had been quite successful in his attack on Ta-wan. The king had been decapitated, the nobles submitted, and a large offering of horses had been presented. On his return with the remaining fragments of his army, the Shen-yu showed an inclination to bar his passage, but had not dared to do so.

In the winter of the following year Kow-le-hoo Shen-yu died of sickness after a reign of one year. He was succeeded by his younger brother Tseay-te-how. Now China, having just succeeded in humbling the kingdom of Ta-wan, and inspiring the various petty nations with a wholesome dread of its power, it appeared to the Emperor that then was the time to put forth a systematic effort to weaken the Hoo. Accordingly he issued a manifesto, in which was the following passage:—"My imperial ancestor Kaou has bequeathed to me the woes of Ping-ching⁸⁶. In the time of the Empress Kaou-how, the Shen-yu sent a most insolent letter.⁸⁷ Formerly Seang, the Duke of Tse, revenged an injury done to an ancestor nine generations past; for which he is commended in the *Ch'un-ts'ew*.⁸⁸ The attitude of China was not without its effect on the Heung-noo, who fearing reprisals, sent back Loo Ch'ung-kwo⁸⁹ and all the other Chinese

⁸⁵ A native commentator says this is 1530 *le* north-east of Chang-yih, or the present Kan-chow in Kan suh. Looking in that direction on the native map, we find a lake Sieh-ne-ha, with a river and mountain of the same name. D'Anville gives it the Mongol name Orec Nor.

⁸⁶ This refers to the ignominious imprisonment of Kaou-te at Ping-ching in B.C. 201, when he was surrounded, with his troops, by the Heung-noo army for seven days. The event seems to have rankled for generations in the breasts of the Chinese. (*Vide supra*.)

⁸⁷ This refers to the insulting epistle sent by Maou-tun to the ruling Empress, in the early part of the second century before Christ. (*Vide supra*.)

⁸⁸ This refers to an event in Chinese History. The Marquis of Ke having spread evil reports about the Lord of Tse, we read in the "Annals of the Bamboo Books," that in 892 B.C., "The king assembled the princes, and boiled the Duke Gae of Tse in a tripod." In 693 B.C. we find this injury revenged by Seang the descendant of Duke Gae, in the extinction of the state of Ke, through his continued oppression; the result as laconically stated in the "*Ch'un-ts'ew*" being that "The Marquis of Ke took a final farewell of his State." (See Legge's "*Shoo-king*," Prolegomena, p. 153. "*Ch'un-ts'ew*," p. 76.)

⁸⁹ The Chinese dignitary who had escorted the funeral of the Heung-noo envoy, in 109 B.C. (*Vide supra*.)

who had not submitted to the Heung-noo. The Shen-yu at the same time spoke of himself in terms of unwonted humility, saying :—" How could I, who am but as a child, dare to face the Son of Heaven ? The Son of Heaven is one of a superior order of beings."

In the spring of the year 100, the Inner Gentleman-usher and General Soo Woo was despatched on a mission to the Shen-yu, with rich presents of silk and money. But he was altogether taken by surprise to find the chieftain more arrogant than ever, his conduct being marked by an unexampled hauteur. The same year, Chaou Poo-noo the Marquis of Tso-ya⁹⁰ managed to make his escape, and got back to China.

Still elated with the prestige of victories in the west, and having failed to humble the Heung-noo by threats, or to coax them by favours, the Chinese resolved to try the force of arms, where diplomacy had failed, and in the summer of 99 three detachments took the field against them. Le Kwang-le with a levy of thirty thousand cavalry, left Tsew-tseuen, to attack the camp of the Right Sage prince at the Teen-shan mountains. Over ten thousand of the enemy were killed on the occasion ; but on their homeward march, the Chinese were surrounded by Heung-noo. Le made a hazardous escape, with a loss of six or seven tenths of his army. Kung-sun Gaou and the Sturdy bowmen General, Loo Po-tih, led an expedition from Ho-se as far as Cho-seay mountain, but with no result. The Cavalry Commandant Le Ling led five thousand infantry more than a thousand *le* north of Kew-yuen ; when he met the army of the Shen-yu, and a battle ensued. More than ten thousand of the enemy fell before the Chinese ; but the provisions of the latter being exhausted, Le Ling was about to return, when he found himself surrounded by the Shen-yu's troops. Driven to the last resource, Le tendered his allegiance to the Heung-noo ; a miserable remnant of four hundred men was all that escaped of his splendid corps to return to their native land. The Shen-yu treated Le Ling with great distinction, and gave him his own daughter in marriage.

Notwithstanding the disastrous results of these expeditions, and apparently to retrieve their prestige, the Chinese planned a campaign on a much grander scale, and the troops began to take the field early in the year 97. Le Kwang-le left Suh-fang with sixty thousand cavalry and seventy thousand infantry ; and was joined by a force of more than ten thousand, under the command of Loo Po-tih. Han Yue left Woo-yuen with thirty thousand infantry. When the Heung-noo heard of this gigantic

⁹⁰ Captured in the year 103 B.C. (*vide supra*).

military enterprise, they moved their families and portable effects to the north of the Too-woo river. The Shen-yu himself waited to receive Le on the south bank of the river, with a force ten thousand strong. They met and joined arms; but Le seems to have had the worst of the day, as he was fain to withdraw, and turned his face in the homeward direction. He was followed up by the Shen-yu, however, and for more than ten days they were engaged in a succession of battles. Han Yue did nothing. Kung-sun Gaou had an engagement with the Left Sage prince; but was unsuccessful, and withdrew his troops.

During the summer of 96, Tseay-te-how Shen-yu died, in the fifth year of his reign; leaving his eldest son, the Left Sage prince, to succeed him as Hoo-luh-koo Shen-yu. The old chieftain had named him on his death-bed as his successor; but being absent at the time, the nobles of the nation believing he was sick, elected his brother the Left Great General to the dignity. The news of this occurrence reaching the Left Sage prince, he would not venture to come forward. His brother, however, sent a messenger to invite him to assume the position, which he was quite prepared to resign in his favour. The elder brother excused himself on the plea of sickness; but the other would accept no refusal, saying:—"Unless you transmit the succession to me at your death, I will not take it." The Left Sage prince then acceded, and appointed his brother to the dignity he had thereby vacated. The latter after a few years fell sick and died. His son Seen-heen-tan, however, did not succeed him in the title; but was made Jih-ch'uh prince, an inferior dignity. The Shen-yu made his own son the Left Sage prince.

For several years we hear of no aggressive movement on either side; but 90 was a year big with important events. The Heung-noo had made an incursion on Shang-kuh and Woo-yuen, killing and capturing officials and people. During the spring they made a second invasion of the commanderies of Woo-yuen and Tsew-tseuen. Le-Kwang-le then moved from Woo-yuen with seventy thousand troops. The Censor and Great Statesman, Shang Keu-ching, left Se-ho⁹¹ with more than thirty thousand troops. Mang Tung, the Marquis of Chung-ho, led forty thousand troops more than a thousand *le* beyond Tsew-tseuen. When the news of these preparations reached the ears of the Shen-yu, he removed his baggage to the station north of Chaou Sin's city at the Che-keu river. The Left Sage prince took his people six or seven hundred *le* beyond the Too-woo river, and stationed himself at Tow-yu mountain. The Shen-yu took

⁹¹ On the site of the present prefecture of Fan-chow, in Shan-se. The chief city is in N. lat. 37 deg., 19 min., 12 sec.; E. long. 111 deg., 41 min.

command of the *élite* of the troops in person. The Left Ganhow crossed the Koo-tseay river. The Chinese detachment under Shang Keu-ching went as far as the Chuy-seay Road, and turned without meeting any of the enemy. The Heung-noo then put more than thirty thousand cavalry under the command of a Great General and Le Ling⁹²; who pursued the Chinese army as far as Tseun-ke mountain. The latter then turned upon their pursuers, and a series of engagements ensued, lasting over nine days; during which there was an extraordinary number of killed, wounded and prisoners on both sides. On reaching the Poo-noo river, the Chinese were so embarrassed with their prisoners that they sent them back. When the Marquis of Chung-ho's troops got as far as the Teen-shan mountains, the Heung-noo sent the Great General Yeu Ken with the Right and Left Hoo-che princes, in charge of over twenty thousand cavalry, to look after the Chinese army; but not liking the formidable appearance of the Chinese forces, they deemed it prudent to withdraw; so that the Marquis of Chung-ho had neither success nor failure to report. About the same time, the Chinese fearing the Marquis of Chung-ho's detachment might be arrested by Keu-sze troops⁹³ sent the Marquis of Ka'e-ling with a force in another direction, which surrounded and captured the Keu-sze king with a great number of his people, and returned. When Le Kwang-le was about to leave the stockade, the Heung-noo had sent the Right and Left Commandants with Wei Leuh⁹⁴ in charge of five thousand cavalry, to attack the Chinese force as they were passing through the gorge in the Foo-yang-kow mountain. Le sent a body of two thousand subject Hoo cavalry to meet them, when a desperate encounter took place, in which the Heung-noo lost several hundred killed, wounded or dispersed. Taking advantage of this success, the Chinese troops pursued them north as far as Lady Fan's city; but the Heung-noo in their flight did not dare to turn on their opponents. About the same time the general Le was overwhelmed by consternation and grief, at the news that his wife and family had been judicially given up to capital punishment.⁹⁵ His servant Hoo A-foo who brought him the tidings, had been involved in the same con-

⁹² The Chinese general who tendered his allegiance to the Heung-noo, in 99 B.C. (*vide supra*).

⁹³ The Ouigours. They were divided into anterior and ulterior Ouigours, and occupied the country around Khamil and Toufan. Fifteen hundred families in 200 B.C. (Doolittle's "Handbook and Vocabulary," vol. ii, p. 205.)

⁹⁴ A Chinese officer who had given in his allegiance to the Heung-noo some years before.

⁹⁵ This had arisen out of the defection of Le-ling from the imperialist cause, who being a relative of Le-kwang-le, all the members of the family had become involved in the punishment.

demnation, and made his escape. He remarked to the general:—"Your wife and family are all in the hands of the officials. Should you return, you will not be able to affect the decision, and will only be immured in the same dungeon. May I meet you again on the north of the Che-keu river." Le now began shrewdly to suspect that his plan would be to make a very distant inroad into the enemy's country, in order to establish a singular reputation for himself. When he arrived at the Che-keu river, he had lost the traces of the enemy. He then sent the Protecting General with twenty thousand cavalry across the river. The first day they met the Left Sage prince and the Left Great general at the head of twenty thousand cavalry, when a battle took place, and the same day the Left Great general was killed and a very large number of the troops killed, wounded and captured by the Chinese. The Chief Historian of the army about that time sought an interview with the Keue-hwuy Commandant and the Marquis of Hwuy-keu, and observed to them confidentially:—"The general has some strange project in his mind. He is anxious to rush into danger for the sake of earning a reputation; so that I fear we shall certainly be lost." They then agreed together that it would be advisable to seize Le. The latter, however, hearing what was in the wind, beheaded the Chief Historian, and led his troops back as far as the Suh-seay-woo-yen-jen mountain. The Shen-yu, aware of the fatigued condition of the Chinese army, led forward fifty thousand cavalry, to obstruct and attack Le's troops, when the number of killed and wounded was enormous. At night the enemy dug a trench several feet deep in front of the Chinese army, and a furious onset was then made on their rear, which ended in the most helter-skelter confusion and complete defeat. The general Le gave in his allegiance to the Shen-yu; who knowing his reputation as a Chinese officer, gave him his own daughter in marriage, and received him with honours and favours even above Wei Leuh.

Next year the Shen-yu addressed a letter to the Chinese monarch in these terms:—"In the south is the great Han; in the north is the formidable Hoo. The Hoo is the haughty son of heaven, who does not trouble himself about petty formalities. Now I wish to form a durable bond of union, by taking to wife one of the daughters of China. My proposal is, that China shall transmit to me yearly, ten thousand piculs of wine, five thousand bushels of millet and rice, ten thousand pieces of silk of various kinds, and other objects as in former treaties; then I will guarantee the exemption of the borders of the empire from raids and robbery." On receipt of this epistle, the Chinese sent

an envoy back with the Heung-noo, bearing an answer. The drift of the Chinese missive is not recorded, but from the absence of all further notice of the matter, we may infer it was unfavourable. The Shen-yu seems to have taken a pleasure in setting those about him to twit the Chinese envoy. They would remark to him:—"China is a civilised and polished nation. But the general Le tells us that the heir-apparent lately raised troops in rebellion. Is that so?" To this the envoy replied:—"True! but that was a private quarrel between a Minister of State and the heir-apparent; when the latter called out troops to chastise him. The Minister having deceived the heir-apparent, was put to death by him. That was a case of the son making use of his father's troops, to subserve his own private purposes;—an offence certainly amenable to punishment. Still it was a venial crime, and not to be compared with that of Maou-tun, who with his own hand put his father to death, and set himself up in his place;⁹⁶ raising a concubine to the dignity of Lady Consort, conduct befitting birds and beasts." The feeling of the Shen-yu may be inferred from the fact that he detained this envoy three years.

Le Kwang-le had been more than a year with the Heung-noo, and the honours he was receiving proved very galling to the jealous spirit of Wei Leuh, when the consort of the chief happened to fall sick. Wei took this opportunity of privately instructing the Hoo augur to say:—"The late Shen-yu said with indignation,—'The Hoo in former times were wont to sacrifice soldiers, constantly expressing the desire that they had a chance to offer up the Urh-size General?'—Why is the deed not now accomplished?" The Urh-size General Le was thereupon seized, but he reviled his calumniators, exclaiming:—"Should I be put to death, there will be an end to the Heung-noo." He was then cut to pieces, and offered up as a sacrifice. This deed was followed by an ominous combination of calamities—a continuous succession of rain and snow for several months, numbers of the animals died, there was an epidemic among the people, and the crops did not ripen. The Shen-yu was alarmed, and raised an expiatory chapel to the general. Immediately after the death of Le Kwang-le, the Chinese lost a Great general and several tens of thousands of soldiers, and they did not organise any fresh military enterprises.

In the beginning of the year 87, the Emperor Woo te died, and was succeeded by Chaou te.

For more than twenty years past, the Chinese troops had been pursuing the Heung noo, and had continued to follow them up far into their northern retreats; so that at the foaling season,

⁹⁶ *Vide supra.*

the mares and cattle had to drop their young by the way, and nearly the whole had perished; thus reducing the people to the extremest misery. From the Shen-yu downwards, there had been a general desire among all classes to have a treaty of peace; and about three years subsequent to this, when they had come to a determination to send a request to China, the Shen-yu fell sick and died, near the end of the year 85. Now the Shen-yu had a younger brother by a different mother, who was Left Great Commandant, and was very popular with the best men of the nation. The Lady Consort fearing the Shen-yu would supplant her son, by appointing the Left Great Commandant his successor, had secretly caused the latter to be assassinated. The uterine elder brother of the victim, resentful of this act of treachery, would never again make his appearance at the palace of the Shen-yu. When the chieftain was on his death-bed, he said to his nobles:—"My son being young, and unable to undertake the government of the nation, I appoint my younger brother the Right Luh-le prince as my successor." When the Shen-yu was dead Wei Leuh and others formed a plot with Chuen-keu the widow, to conceal the circumstances of the chieftain's death, and falsify his dying commands. She then bound the nobles by an oath, to raise her son the Left Luh-le prince to the succession, with the style of Hoo-yen-te Shen-yu.

On the accession of the new prince, it was rumoured that the Chinese envoy had expressed a desire for a treaty of peace to the Left Sage prince. The Right Luh-le prince, incensed that his claims to the succession had not been recognised, hoped to draw the mass of the people southward, and tender their allegiance to the Chinese. Apprehensive, however, that his influence might prove inadequate to such an enterprise, he endeavoured to enlist the service of the Loo-t'oo prince to aid him in concocting a plot with Woo-sun, (which had recently become subject to China,) to attack the Heung-noo. But the Loo-t'oo prince divulged the plot. The Shen-yu then sent a messenger to verify the fact of the non-submission of the Right Luh-le prince. The latter, however, reversing the facts of the case, laid the crime of disaffection to the charge of the Loo-t'oo prince, and said the people all accused him falsely. The two princes then retired to their respective locations, and would never join the national gatherings at the Dragon city.

In the autumn of 82 the Heung-noo made a raid on Tae, and killed the Commandant. The Shen-yu being very young at his accession, his mother took no care to rectify the affairs of the nation, always fearing an invasion by the Chinese. Wei Leuh therefore advised the Shen-yu to dig wells, build city walls, and prepare magazines for storing grain, placing them under the

82年秋 興奴王 率兵 攻 泰 殺 守 將
 興奴王 年幼 其 母 不 能 治 國 常 恐 中 國 侵 犯
 韋 魯 勸 興奴王 掘 井 築 城 儲 糧 於 城 下

protection of Tsin men ; so that if the Chinese troops came, there would be no occasion for apprehension. Operations were set on foot for carrying out this programme ; several hundred wells were sunk, and some thousands of trees cut down. It was the opinion of many, however, that the Hoo were incapable of defending a city ; and that they were merely heaping up stores that would be left to the Chinese. Under this influence therefore, Wei Leuh stopped the operations.

During the year 81, it was decided to send back Soo Woo⁹⁷ Ma Hung and the other Chinese who had never given in their allegiance. Ma Hung was formerly second to the Banqueting-house Great statesman Wang Chung when he was sent on a mission to the countries in the West, and was stopped by the Heung-noo. Wang Chung was killed in the encounter, and Ma Hung was taken prisoner, but would never transfer his allegiance to his captors. Hence by sending back these two men to their country, it was thought the Heung-noo would inspire the Chinese with confidence in their good intentions.

Next year the Heung-noo sent twenty thousand cavalry from their right and left divisions, in four bands, which entered the Empire simultaneously on a marauding expedition. They were expelled however by the Chinese troops with a loss of nine thousand killed and captured, including the Gow-t'o (*Border*)⁹⁸ prince ; while the Chinese loss was insignificant. The Heung-noo seeing that their Gow-t'o prince was taken captive, and fearing the Chinese might make use of his services to lead the way in an attack on them, removed still farther to the northwest, not daring to move southward for pasture and water ; while they told off a detachment of their people, to form a colony on the southern border, to guard against surprises.

In the year 79, the Heung-noo sent south nine thousand cavalry, to establish a colony at Surrender city, to be a check on the Chinese ; and made a bridge across the Too-woo river, to facilitate the passage in the event of refugees. Wei Leuh was now dead ; but during his life, he had always spoken of the advantages of a treaty of peace. The Heung-noo had not been accustomed to put much confidence in anything he said ; but since his death they had suffered intensely from the military operations, and the nation had become still more impoverished ; so that the Shen-yu's younger brother, the Left Luh-le prince, called to mind what Wei Leuh used to say about a treaty ; and

⁹⁷ It will be remembered this officer was sent on a mission to the Shen-yu in 100 B.C., with rich presents from the Emperor of China. (*Vide supra.*)

⁹⁸ It was the Heung-noo custom to skirt the borders of their territory with a line of mud hovels, called "gow-t'o" in their language. It devolved upon the occupants of these to give warning to the tribe of the approach of danger. The leader of this contingent was called the Gow-t'o prince.

would gladly have assented to one. But fearing the Chinese would not listen to the proposal, he was unwilling to be the first to broach the question openly. However he took care that the matter should be bruited in the hearing of the Chinese envoy. In the mean time their bandit incursions became much less frequent. They treated the Chinese envoy with greater liberality, wishing gradually to approach the question of a treaty; but the Chinese held them under firm restraint. Shortly after, the Left Luh-le prince died; and the Shen-yu sent the Le-han prince to reconnoitre on the borders. He reported Tsew-tseuen and Chang-yih as having the feeblest military defences. Troops were then sent to attempt an attack, in the hope of regaining that country. But the Chinese were informed of their plans by some of the Heung-noo who had submitted; and a manifesto was issued by the emperor, rousing those on the border to stand on the defence. Shortly afterwards the Right Sage prince and the Le-han prince, with four thousand cavalry, divided into three bands, entered Jih-lih, Uh-lan and Fan-ho; when the governor of Chang-yih and the Subject-nation Commandant attacked and completely routed them; only a few hundreds of their men being able to make their escape. One of the mounted troops of the E-k eu prince, a Colonel in the Subject-states contingent, shot the Le-han prince; for which service he was presented with two hundred pounds weight of gold, and two hundred horses, and had the title of Le-han prince conferred on him. The Subject-states Commandant, Ko Chung, was created Marquis of Ching-gan. After this the Heung-noo never again ventured to enter Chang-yih.

In the year 78 more than three thousand Heung-noo cavalry entered Woo-yuen, where they killed and captured several thousand people. Subsequently several tens of thousands of cavalry came southwards on a hunting expedition in the neighbourhood of the stockades; attacked the fortresses and look-out towers outside the stockades, and carried off the officials and people. At that time the beacon fires could be distinctly seen along the border regions of the empire; so that the Heung-noo got little advantage by their marauding incursions; and they seldom afterwards ventured on the stockades. The Chinese had recently received the submission of some of the Heung-noo, from whom they learned that the Woo-hwan⁹⁹ had desecrated the grave of a former Shen-yu; and the Heung-noo highly incensed

⁹⁹ In 209 B.C. Maou-tun scattered the Tung-hoo Shan-jung (*vide supra*) who divided themselves into two bands, one of which took refuge in the mountains called Woo-hwan, which is the country now occupied by the Mongol tribe, Arou-kortsin. (Doolittle's "Vocabulary and Handbook," vol. ii, p. 202.)

at the action, had sent twenty thousand cavalry to punish them for the offence. The Great general Ho Kwang, who conceived the idea of sending troops to intercept and attack them, asked the opinion of Chaou Ch'ung-kwo the Commandant of the protecting army, who replied:—"The Woo-hwan have of late frequently attacked the stockades; now if they are chastised by the Heung-noo, it will be the best thing possible for China. Besides the Heung-noo now rarely commit raids on the northern border, and we are happily free from disturbance. It is best to let the barbarians attack and destroy each other. By sending troops, to give it an importance, would be to invite raids and give rise to disturbance, a state of things by no means desirable." He next asked counsel of the Inner Gentleman usher and General Fan Ming-yeu, who approved of an attack on the belligerents. Fan himself was appointed Too-leaou general, and left Leaou-tung with twenty thousand cavalry, under his command. When the Heung-noo heard that the Chinese forces were in the field they retired. Ho Kwang had warned Fan not to advance at hap-hazard; but to wait till the Heung-noo had attacked the Hoo-hwan, and let the latter spend their fresh strength on the Heung-noo troops first.

Next year, after the Woo-hwan had been attacked and weakened by the Heung-noo, the Chinese made an attack on the Woo-hwan, killed more than six thousand, and returned with the heads of three of their princes. Fan was then created Marquis of Ping-ling. In view of these movements, the Heung-noo were very chary of again sending out troops. About the same time they sent an envoy to Woo-sun, to request the Chinese princess. This was followed by an attack on Woo-sun, in which they took the territory of Keu-yen-go-sze. The Woo-sun princess forwarded a letter to the Emperor, who handed it over to the dukes and ministers of state, to deliberate on sending succour; but before they had come to a decision, the Emperor Chaou-te died, and was succeeded by Seu-en-te.

On the accession of the new emperor, the Kwan-me (*King*) of Woo-sun again forwarded a dispatch to China, complaining that he had been several times invaded and plundered by the Heung-noo, and stating his desire to send the greater part of his best troops and fifty thousand horses, and to strain every nerve to chastise the Heung-noo. The emperor then decided to send troops for the succour of the princess.

In the year 72 there was a great levy of light and active recruits in Kwan-tung, and selected officials from the various states, with an emolument of three hundred piculs, well-matched and robust, skilled in equestrian archery, who were all attached to the army. The censor and great statesman, Teen Kwang-

ming, who was made Ke-leen (*Celestial*) general, advanced from Se-ho, with more than forty thousand cavalry. The Too-leaou (*Cross Leaou*) general, Fan Ming-yew, left Chang-yih with more than thirty thousand cavalry; the Van general, Han Tsang, left Yun-chung, with over thirty thousand cavalry; the Rear general, Chaou Ch'ung-kwo, who was made Poo-luy (*Reed*) general, left Tsew-tseuen with more than thirty thousand cavalry; the governor of Yun-chung Teen Shun, who was made Hoo-ya (*Tiger's teeth*) general, left Woo-yuen with over thirty thousand cavalry. Thus these five generals had under their command between one and two hundred thousand horsemen, and it was arranged that they should all advance above two thousand *le* beyond the stockades. Besides these, Chang Hwuy, the master controller, raised a protecting contingent. The Turki Kwan-me of Woo-sun took command in person of the Heih-how and their subordinates, more than fifty thousand cavalry, and advanced from the west; making, together with the companies of the five generals, altogether the enormous army of more than two hundred thousand troops.

As soon as the news of this extraordinary movement reached the Heung-noo in 71, they were seized with dismay, and lost no time in evading the impending danger. The aged and feeble without exception made a precipitate retreat, with their flocks and herds, far away into a remote region, where they might be safe from their pursuers. The result was that the five commanders had a comparatively poor account to render of their proceedings. The Too-leaou general went as far as the Poo-le-how river, more than twelve hundred *le* beyond the stockades; having killed and captured more than seven hundred of the enemy, and carried off more than two thousand horses, oxen and sheep. It was understood that the troops of the Poo-luy general were to meet those of Woo-sun, when the combined force should make an attack on the Heung-noo at Poo-luy lake.

The Woo-sun army reached the appointed place first, and left again before the Chinese troops came up, so that they did not meet. The Poo-luy general went more than eighteen hundred *le* beyond the stockades, some distance to the west of the How mountain, having killed and captured over three hundred, including the Shen-yu's envoy the Poo-yin prince, and his subordinates, and carried off more than seven thousand horses, sheep and oxen. It was reported that he returned with his capture, having never reached the appointed place of meeting; the emperor, however, condoned the offence, and did not visit him with any punishment. The Ke-leen general went as far as the Ke-chih mountains, sixteen hundred *le* beyond the stockades,

having killed and captured nineteen of the enemy, and taken over a hundred oxen, horses and sheep. He met the Chinese envoy to the Heung-noo, Yen Hung and his company, returning, who told him that, on the west of the Ke-chih mountains, there were a large number of the enemy. The general, however, enjoined on Yen Hung to say nothing about what he had told him, as he wished to return with his troops. Kung-sun Yih-show, an *attaché* of the censorate, remonstrated on the impropriety of his conduct; but the general would not listen, and returned with his troops. The Hoo-ya general got as far as the Tan-too-war river, more than eight hundred *le* beyond the stockades, but took his troops no farther, having reported as killed and captured over nineteen hundred people, with a booty of over seventy thousand horses, oxen and sheep. The emperor decided that the Hoo-ya general not having gone to the place appointed, had exaggerated the amount of his booty; and Ke-leen, knowing that the enemy were in front, had refused to advance, taking a circuitous route to avoid them. Both these were consequently handed over to the officials, and committed suicide. Kung-sun Yih-show was promoted to be censorate attendant. Chang Hwuy, the master controller, went with the Woo-sun troops to the right Luh-le's court, captured the Shen-yu's paternal relatives, sisters-in-law, princes next in rank, Le-han commandant, colonels, leaders, and subordinates, over thirty thousand in all, and took over seven hundred thousand horses, oxen, sheep, asses, mules, and camels; for this meritorious service Chang Hwuy was made Marquis of Chang-Lo. The above numbers do not, however, by any means, represent the losses of the Heung-noo, for a vast number of those who escaped were mortally wounded, and in removing their cattle to so great a distance, the numbers that perished were incalculable. Exhausted and reduced by this campaign, the Heung-noo were full of resentment against Woo-sun, as having been the immediate cause. The same winter the Shen-yu, with a cavalry force of several tens of thousands, made an attack on Woo-sun, and carried off a great number of the aged and feeble; but on the way home he was overtaken by such a violent storm of rain and snow—the snow falling to a depth of over ten feet in one day—and so heavy was the mortality among the people and the cattle from the cold, that not one in ten returned. Taking advantage of the enfeebled condition of the Heung-noo at that crisis, the Ting-ling attacked them on the north; the Woo-hwan advanced upon them from the east; while the Woo-sun attacked them on the west. By this threefold onset they lost several tens of thousands of people, and several tens of thousands of horses, besides a great number of oxen and sheep.

Still greater was the number of those who died from starvation; about three tenths of the people, and half of the beasts. Thus decimated and weakened, the Heung-noo became an object of coercion to every nation. They were scattered like loose tiles, attacked and robbed, without the power to resent it.

The following year the Chinese sent above three thousand cavalry, who advanced simultaneously upon the Heung-noo by three different roads, took several thousand prisoners and returned. The Heung-noo never afterwards dared to think of reprisals. They were now anxious to have a treaty of peace, and disturbances on the border became a thing of very rare occurrence.

In the year 68, Hoo-yen-te-Shen-yu died, after a reign of seventeen years, and was succeeded by his younger brother, Heu-leu-keuen-keu Shen-yu.

The first act of the new chief was to exalt the daughter of the Right Great general to the position of Lady Consort; and to degrade the Chuen-keu Consort, the favourite of the late Shen-yu; which was viewed with great indignation by the father of the Lady Chuen-keu, the Left Great Tseay-keu. The Heung-noo were not then in a position to make any raids on the borders of the empire. The Chinese therefore abandoned the occupation of the extra-mural cities; and the people enjoyed a cessation of hostilities for a time. The Shen-yu heard of this with much satisfaction, and called together his nobles to consult about a treaty of peace with China. But the Left great Tseay-keu, with the secret intention of subverting their counsel, said:—"Hitherto when China has sent an envoy, he has been soon followed up by an invasion. Now we ought to follow the example of China, and send an envoy previous to sending troops." He then proposed that he and the Hoo-loo-tsze prince should each take the command of ten thousand cavalry, go southwards on a hunting tour in the neighbourhood of the stockades, and enter the empire together. It happened, however, before they had reached the appointed place, that three of their cavalry fled and made their submission to the Chinese, informing them that it was the intention of the Heung-noo to make a raid. The Emperor thereupon issued a decree to have cavalry posted along the borders, and military colonies established in the most exposed places. A Great general, a Military inspector, a Mass leader and another officer were put in charge of five thousand cavalry, divided into three bands; each of which went several hundred *le* beyond the stockades, captured several tens of people and returned. The consequence thus resulting from the desertion of the three horsemen was, that the Heung-noo did not dare to enter, and withdrew their forces. This year there was a famine among the Heung-noo,

and six or seven-tenths of their people and animals died. They again established two military colonies, with ten thousand cavalry in each, as a defence against the Chinese. In autumn the prince and his subordinates, several thousand in all, of the Western Jö,¹⁰⁰ who had formerly been captured by the Heung-noo, and located on their left hand land, drove off their herds and had a battle with the (gow-to) "border guard," in which a vast number were killed and wounded. They then went south, and tendered their allegiance to China.

In the year 64, the cities of the Western regions made a combined attack on the Heung-noo, which resulted in the latter taking the kingdom of Keu-sze, and carrying captive the King and a multitude of the people. The Shen-yu then supplanted the King by his brother Tow-mo: and removed the remainder of the people to a more eastern locality, as he would not venture to leave them in the old country. The Chinese sent more troops to colonise the Keu-sze country, and bring it under cultivation.

During the year 63, the Heung-noo, indignant that the Keu-sze should have been simultaneously attacked by the different kingdoms, sent a Right and a Left Great general, with over ten thousand cavalry each, to colonise and cultivate their right hand lands; intending to invade and oppress Woo-sun and the Western regions.

Towards the end of the year 62, the Heung-noo sent a Right and a Left Yuh-keen, with six thousand cavalry each, and the Left Great general, to attack the city that the Chinese had built for the cultivation of the Keu-sze country; but they were unsuccessful.

The Ting-ling, who had been making plundering incursions on the Heung-noo for three years past, became still more audacious in 61; having killed and captured several thousands of the people and driven away their horses and cattle. The Heung-noo sent more than ten thousand cavalry to chastise them, but without any result.

Early in the year 60 the Shen-yu started on a hunting expedition, with considerably over a hundred thousand cavalry, to go southward in the neighbourhood of the stockades, intending to enter the borders on a grand raid. Before getting that distance, however, Ch'oo-keu-tang, a man of mark among his people, fled and submitted to the Chinese, giving them an account of how matters stood. The Chinese were suspicious of his statements; nevertheless they sent the Rear general Chaou Chung-kwo, in charge of more than forty thousand cavalry, to plant military

¹⁰⁰ The Jo were Ugro-Tartaric tribes allied to the Kiang (Smith's "Vocabulary of Proper Names," p. 16).

colonies along the borders of the nine regions, in order to guard against seizures.

After a little more than a month, the Shen-yu was attacked with vomiting of blood ; so that he returned without venturing to enter the empire, and military operations were consequently suspended. Too-le, Hoo-tsze and others, the most distinguished of the princes, were then sent on a mission to the Chinese court, to request a treaty of peace ; but before an answer was received the Shen-yu died, in the ninth year of his reign. At the outset of his career he had degraded the Chuen-keu Consort ; and the latter had carried on a secret intercourse with the Right Sage prince. This prince having absented himself from the gatherings at the Dragon city, the Chuen-keu Consort had kept him *au courant* in regard to state movements ; and now took care to inform him of the dangerous illness of the Shen-yu, that he might keep himself within convenient distance. A few days later, on the death of the Shen-yu the Ho-suh prince Hing-wei-yang sent messengers to assemble all the princes. Before they had arrived, however, the Lady Chuen-keu and her younger brother the Left Great Tseay-keu Too-lung-ke formed a plot, and set up the Right Sage prince, with the style of Uh-yen-k'eu-te Shen-yu. The latter had succeeded his father as Right Sage prince, being the great-grandson of Woo-wei Shen-yu. One of the first acts of the new chief was to renew the treaty with China. He sent his younger brother E-tsew-jô to represent him at the Chinese court with offerings. The commencement of his reign was signalled by a number of atrocities that augured ill for the future. He put to death Hing-wei-yang, and all the other nobles who had been in the service of Heu-leu-keunen-keu ; and put in a responsible office Too-lung-ke the younger brother of the Chuen-keu Consort. He further removed from positions of rank, all the children and near relatives of the late Shen-yu, and supplied their places by his own sons and brothers. Ke-how-shan the son of Heu-leu-keunen-keu, being thus excluded from the succession, left the court irate, and paid a visit to his father-in-law, the prince of Woo-shen-moo. This was the name of a small kingdom lying between Woo-sun and Sogdiana, which was frequently invaded and distressed by more powerful neighbours, till the king felt constrained to take his subjects, a few thousand in number, and tender his allegiance to the Heung-noo. Hoo-luh-koo Shen-yu had given the king his niece, the sister of the Gih-ch'uh prince, in marriage, and settled him with his people in the right hand land. The Left Sage prince, father of the Jih-ch'uh prince Seen-heen-tan was to have been Shen-yu, and ceded the dignity to Hoo-luh-koo Shen-yu, who promised him the succession ; hence the popular opinion was very freely expressed, that the Jih-ch'uh

prince ought to be the Shen-yu. The Jih-ch'uh prince, having formerly had a quarrel with Uh-yen-k'eu-te Shen-yu, he now took his adherents, several tens of thousands of cavalry, and tendered their submission to the Chinese. The Chinese created the Jih-ch'uh prince, Marquis of Kwei-tih. The Shen-yu then made his own relative, Po-seu-tang the Jih-ch'uh Prince.

The Shen-yu added to the measure of his iniquity in 59, by putting to death the two younger brothers of Seen-heen-tan; his heart was so envenomed by rage, that he refused to listen to the appeal of the prince of Woo-shen-moo who interceded on their behalf. Subsequently the Left Yuh-keen prince died, and the Shen-yu put his own little boy in his place. The other Yuh-keen prince and the nobles, however, unitedly chose the son of the deceased Yuh-keen prince as his successor, and all removed to the east with him. The Shen-yu sent the Right Minister of State with ten thousand cavalry to attack him, but the Minister was defeated with the loss of several thousand men. By the time the Shen-yu had been two years in power, his cruelties and oppression, in putting to death and punishing, had alienated the hearts of the nation; and his eldest son, the Left Sage prince, having several times reviled the nobles of the left-hand land, had succeeded in exciting a spirit of indignation against himself.

In addition to internal disquiet, the Heung-noo were attacked by the Woo-hwan on the eastern border in the early part of 58. The people were becoming much attached to the Koo-sie prince, at which the Shen-yu was greatly irritated. The prince apprehensive of results, united with the prince of Woo-shen-moo and the nobles of the left-hand land in setting up Ke-how shan, with the style Hoo-han-seay Shen-yu; and raised forty to fifty thousand left-hand land troops, who moved westward to attack Uh-yen-k'eu-te Shen-yu. They had reached the north side of the Koo-tseay river before an engagement took place; but when they met, the troops of Uh-yen-k'eu-te were utterly defeated and fled. The fallen chief sent to his brother, the Right Sage prince, saying:—"The Heung-noo have made a united attack on me, are you willing to assist me?" The Right Sage prince replied:—"He who has no love for his people, and puts to death his brothers and the nobles of the nation, must die in his own place. Do not come to harass me." Uh-yen-k'eu-te, full of rage, committed suicide, thus ending an inglorious reign of scarcely three years duration, by an ignominious death. The Left Great Tseay-keu Too-lung-ke fled to the Right Sage prince! and the people all testified their allegiance to Hoo-han-seay Shen-yu.

To be continued.

DISCUSSION.

MR. HYDE CLARKE said that Mr. Howorth had rendered a valuable

service in obtaining a translation of these annals which would throw great light on the early history of the nomades. So far as he was aware, the earliest western evidence was in the few words of Scythian, given by Herodotus, and which he considered to be Manchoo.

The WESTERLY DRIFTING of NOMADES, from the FIFTH to the NINETEENTH CENTURY. By H. H. HOWORTH.—Part XII. The HUNS.

I HAVE now reached the termination of my journey. By your forbearance, I have been permitted to trace the gradual progress of the successive waves of nomadic invaders which have pressed upon eastern Europe since the fifth century; and have, I hope, thrown some light on a very confused subject, which is dry enough to repel most inquirers, and yet important enough to stand at the very threshold of all sound ethnological reasoning. It is a weakness with me, to believe that we can only approach the great problem of the origins of man by tracing his history back from the present to the earlier past; and the natural gateway to this long lane is, I believe, to be found in the revolutions of the Asiatic nomades, who have been the latest, as they are the typical, examples of one race displacing another. With this view, I have tried to trace back the Mongols, the Turks, and the pre-Turkish races to their ancient homes, and to unravel some of the crooked details of their affinities. Much remains to be done, for the subject is both very complicated and very large; but for the present, I have done with it in reaching the Huns. They form the first, as the Mongols do the last, of a series which has much in common, and whose story may be wrought into a continuous whole. I hope to take up the subject again at a future time, to correct many mistakes which are almost inevitable in such inquiries, and to carry back the story to the days of Herodotus; but in the meanwhile, I wish to work out the race revolutions among the Slaves, which have been much mistaken, and are closely connected with those of the nomades; and this subject will be treated of, with your permission, in the next series of papers.

The Huns have been the subjects of a great deal of controversy. Empirical answers, of very different kinds, have been given to the riddle of their race affinities; some connecting them with the Mongols, others with the Turks, others again, and the most influential, with the Ugrians; but a vast deal of matter still remains to be brought together about them, whose partial collection may, I hope, put the question of their affinities on a safer basis.

I have more than once observed that the *cul-de-sac* formed by

the Caucasus, the Caspian, and the Euxine, is a by-wash in which a great many of the nomadic invaders of eastern Europe have dropped some of their numbers; and we may hopefully approach that region in search of relics of tribes and races known elsewhere merely as historic names; and I believe this to be especially the case with the Huns. With this object I now propose to examine the pedigree of the Lesghian tribes. Trusting for my facts chiefly to Guldenstadt (*Beschreibung der Kaukasischen Länder*) and to Klaproth. The first thing that strikes one, in looking over the names of these tribes is, that one of them, and that the most important, is actually still called Avar; on proceeding further, we find that the Circassians give the Lesghian tribes the general name Hhannoatche (*i.e.* Huns), while the Georgians call those who are otherwise known as Avar, by the name Chundsach (*i.e.*, Huns, or Chunni). One of the Chiefs of the Lesghian princes is entitled "Awar Khan"; in Russian, "Avarskoi Khan." The same individual is called "Chundsakhis Batoui" by the Georgians. Again, the chief village of the "Avar" tribe is called "Chundsach"; in Turkish, "Avar," *vide* Guldenstadt, *op. cit.* I have already observed that *prima facie* it is probable that we should meet with some remains of the "Huns" in the great by-wash of the migrating flood of tribes that have passed over the Russian Steppe. It is not strange, therefore, that we should there, and there only, meet with tribes who still bear the name of "Avar" and "Hun," and who, therefore, have a *prima facie* right to be considered as the descendants of the ancient Huns. Klaproth, whom it is too much the fashion now-a-days to abuse, and who, in spite of some mistakes, perhaps, did more than all other inquirers put together, to clear up the historical ethnography of Asia, first made a detailed examination of the traces of the "Huns" in the Caucasus. It had long been known that among the "Lesghians," there was a redoubtable tribe called the "Avars," whose chief was called "Avarkhan," and whose country was named "Chundsag." These names were startling enough to have attention called to them, as offering some evidence on the problem of Hunnic ethnology; but it was reserved for Klaproth to give them their due weight. The most brilliant and effective proof adduced by him was the following list of names, in which the names of the various Hunnic leaders are put side by side with those of names in common use now among the Lesghians.

Attila	Adilla, a very common man's name.
Ould Ouldin	Ouldin, an "Avar" family.
Boudak	Boudakh Sultan.
Ellak	Ellak.
Dingitsik	Dingatsik, a family name.

Eskam, daughter of Attila	Eska, a woman's name.
Balamir	Balamir.
Almus	Armus
Leel	Leel.
Tsolta	Solta.
Geysa	Gaissa.
Zarolta	Zarolta.

To those who are accustomed to ethnographic inquiries, this list of names is of itself almost conclusive; but it may be strengthened considerably by the examination of the few Hunnic words that have reached us. "In the Lesghi-Avar tongue," says Klaproth, "a river is called 'or, hor, ouor.'" Jornandes (chapter 52) says "*Pars Hunnorum in fugam versa eas partes Scythiæ petiit quas Danubii amnis fluenta prætermeant quæ lingua sua Hunnivar appellat.*" I have always thought that this last sentence ought to be read thus: "*quæ lingua sua Hunni Var appellat*"; and my conjecture is amply confirmed by a MS. in the French Royal library, number 5873. It is of the 13th century, and on folio 31, we read thus: "*q' lingua sua huni uar appellat.*" Thus we find the "Huns" giving the name of Uar or Var, to the river Danube: the river *par excellence*; while Var, or Or, is the very name for river among the Lesghian Avars. (See Klaproth, *Tableaux Historiques del Asie*, 245-6.) Among the Avars, "Til" meant black; "dir," which is only another form of the same word, has the same meaning among the Avarean Lesghi tribes of Antsukh and Tchar. "Vokolabras," meant "chief priest," among the old Avars. "Vokhula," means "chief" among the Lesghs of Antsukh. Among the names of Avar chiefs that have come down to us, those of Baian, Samur, Solakh, and Kokh are still in use among the Lesghi and Mitsdgegghi. (Klaproth, *op. cit.*, 268.) Among the ancient Bulgarians, the princes were styled "Boilad," which answers exactly to the Avar-Lesghi term for princes, which is, be-led. (Klaproth, *op. cit.*, 261.)

These proofs are conclusive, and suggest further questions. In a paper of this series, on the "Alans," I have tried to show that their descendants are to be traced in the Ingushes and Mitsdgegghi, whose language has some affinities with the Avarian and other tongues of Lesghistan; but that the latter has an additional foreign element. If Klaproth's contention be right, and also our own argument about the Ingushes, it would make the Alans and Huns more or less related, which, from what we know of them in ancient authors, is by no means improbable. Let us continue. The Lesghian tribes proper, have been divided according to their languages, by Guldenstadt and Klaproth, into four well marked divisions: first, the Avar, including the dialects of Anzug, Dshar, and Chunsag, which are in reality identical;

second, the Andi; third, the Dido; fourth, the Kazikumuk; and fifth, the Akush and Kubetchi. The two last divisions I should be disposed to class together. They differ considerably from Avar, and have a much closer affinity with the Ingushes. I shall say more about them presently. The Dido dialect is, I believe, chiefly marked, as we should expect from its position, by a large mixture of Georgian words. We have left the Avar and the Andi; Andi, I make to be a corruption of Hun; and I believe the Avars and Andi of the Caucasus represent very fairly the difference there was between the Huns and Avares of the old time. Generically classed as one by the ancients, as we class the Andi and Avares now under the generic term of Lesghs; but specifically showing considerable marks of difference. These marks of difference are of much interest and importance. For in examining the elaborate tables contained in the text of the "Asia Polyglotta," (page 133-137,) we shall find, that while the Andi dialect approximates very closely to the Ugrian or Finnic dialects proper, that the Avar has many idiosyncrasies related to the Samoyedic class of Siberian languages. I believe this peculiarity has not hitherto been noticed by any one. This distinction between Huns and Avars, is in remarkable agreement with the historical testimony; whereas we find a continuity in the history of the Huns, Bulgarians, and Hungarians. The Avars come in as a different element, having a separate history, and we find them fighting, not in alliance with, and as brothers of the other Hunnic tribes, but as rivals, and as masters. Let us now turn to the history of the Huns.

The history of the Huns is generally commenced with the notices of them contained in the narratives of Ammianus, Marcellinus, and Jornandes; but they were known in Europe at an earlier date. Ptolemy (A.D., 175-182) mentions the Chumni between the Bastarnæ and Roxolani, and places them on the Dnieper; but Schafarik suggests that this may be an interpolated passage. (See the *Slavische Alterthumer*, 1,322). Dionysius Periegetes, who wrote about 200, A.D., names them among the borderers of the Caspian in this order: Skyths, Huns, Caspiani, Albani. Eratosthenes (who wrote 238, B.C.), as quoted by Strabo, mentions the same tribes in the same order, only that Utii is substituted by the earlier author, for Huns in the later, which makes the narrative of Dionysius doubtful. (Schafarik, *Id.*) The Armenian historian, Moses of Chorene, relates that Tiridates the great, who reigned from 259 to 312, A.D. defeated the tribes of Daghestan, and pursued them to the land of Hunk, *i.e.*, of the Huns; and Zonaras reports a tradition that the emperor Carus, in the year 284, fell in an expedition against the Huns. It was in 374 or 5 that the Huns made their first really important ad-

vance into Europe. Jornandes tells us their leader was named Balamir, or, as some of the MSS. make it, Balamber. (Thierry, history of Attila, and his successors, 617.) Ammianus tells us that the Huns, being excited by an unrestrainable desire of plundering the possessions of others, went on ravaging and slaughtering all the nations in their neighbourhood, till they reached the Alani. (Ann. Mar., A.D., 580.) Having attacked and defeated them, they enlisted them in their service, and then proceeded to invade the empire of the Ostrogoths, or Grutungs, ruled over by Ermanric. Having been beaten in two encounters with them, Ermanric committed suicide. His son, Vithimar, continued the struggle; but was also defeated and killed in battle, and the Ostrogoths became subject to the Huns. The latter now marched on towards the Dniester, on which lived the Visigoths or Thervings. Athanaric, the king of the latter, took great precautions, but was nevertheless surprised by the Huns, who forded the river in the night, fell suddenly upon his camp, and utterly defeated him. He now attempted to raise a line of fortifications between the Pruth and the Danube, behind which to take shelter; but was abandoned by the greater portion of his subjects, who, under the command of Alavivus, crossed the Danube, and, by permission of Valens, settled in Thrace. The Huns now occupied the country vacated by the Goths; they succeeded, in fact, to the empire of Ermanric, and apparently subjected the various nations over whom he ruled. They did not disturb the Roman world by their invasions for fifty years, but contented themselves with overpowering the various tribes who lived north of the Danube, in Sarmatia and Germany. Many of them, in fact, entered the service of the Romans. Thus, in 405, one Uldin, a king of the Huns, assisted Honorius in his struggle against the Visigoths of Ladagasius, and decided by a rigorous charge of horse, the battle of Florence. He had already befriended Arcadius. During the regency of Placidia, sixty thousand Huns were in the Roman service (Thierry, *op. cit.*, 141). Meanwhile, although they did not attack Rome directly, the Huns were gradually forcing the tribes of Germany, the Suevi, the Vandals, Alans, etc., across the Rhine, and gradually pushing themselves along the valley of the Danube. In 407, they appeared under their chief, Octar, in the valley of the Rhine, and fought with the Burgundians on the Main (Thierry, 43). This Octar was the brother of Mundzikh, the father of Attila; there were two other brothers, Abarre, and Ruas, who divided between them the greater part of the Hunnic tribes. The latter became a notable sovereign, and has lost a reputation, as so many others have, by having a more fortunate successor. He was the friend of Cœtius. The emperor Theodosius the second, paid him an annual stipend of three hundred and

fifty pounds of gold, and created him a Roman general. This good feeling was disturbed by the Romans having given refuge to certain revolted Hunnic tribes, the Anuldsuri, Ithimari, Touosuri, and Boisci (Priscus, cited by Thierry, *op. cit.*, 46); the same confederacy that, as I have already mentioned from Jordanes, was the first to cross the Mæotis. This quarrel led to the sending of envoys, who arrived after the death of Ruas, and were received by his nephews, Attila and Bleda, as is graphically described by Gibbon. The meeting was followed by the treaty of Margus. The two brothers now proceeded to conquer several tribes north of the Danube. They first subdued the Sorosgi, a tribe who are elsewhere mentioned by Priscus, with the Saragurs and Onagurs, and was probably Hunnic, or, perhaps, Alanic. In 448, Attila conquered the Akatziri, called Akatziri Unni, by Priscus, another Hunnic confederacy, on the Pontus, which afterwards revived under the name of Khazars. Having destroyed their chiefs, except one named Kuridakh, he placed his son Ellak in authority over them. He then proceeded to subdue the various Slavic and German tribes, that still remained independent; extending his conquests to the Baltick. I am not going to relate the long, and generally victorious, struggle which he carried on against Rome, which concluded with the terrible fight on the Catalannian fields. It has been told with spirit by Gibbon, and in profuse and exhaustive detail by Thierry, in his "History of Attila and his successors." Smith, in his notes to Gibbon, has tried, but, as I think, most ineffectually, to limit his empire, generally, to the valley of the Danube. It is, in fact, hard to say where his influence, and that of his followers, did not reach. Attila and his Huns are named in the Edda; and the Niebelungenlied, the epics of Scandinavia and Germany, and the rude monuments of North Holland and of Germany are still known as Hunnenbedden. The empire of the Huns was sustained by the strong hand of Attila. On his death, in 453, it began to fall in pieces; his sons began to quarrel, and Ardaric, the king of the Gepidæ, began the general revolt of the dependent nations. A great struggle ensued between the various German tribes and the Huns, allied with the Alans and Sarmatæ. It was fought out at Netad, where the latter were badly beaten; forty thousand of them were killed, including Ellak, the eldest son of Attila. His brothers, with the rest of the Huns, retired to the Steppes of the Black Sea, and the plains of Pannonia, or Hungary, while the Gepidæ occupied their deserted places in Dacia. In 456, the Huns, who had been recruiting their strength, once more crossed the Danube to attack the Ostrogoths, and were again beaten. They now split asunder; those who wished for freedom, retired with Denghizikh, a son of Attila, to the Steppes north of the Danube;

the rest, who were disposed to settle, submitted to the Romans, and under Hernak, another son of Attila, were allowed to occupy the country about the mouth of the Danube, called Little Scythia. (Thierry, *op. cit.*, 249 and 50). Candax, a chief of the Alans, also settled close by. He was, apparently, a dependent of the Huns, for when he was attacked by the Goths, we find Denghizikh marching from his camp on the Dnieper, to assist him. With him, went the Hunnic tribes of the Ulzingurs, Angiscires, Bitugores, and Bardores. (Thierry, *idem* 253.) The Ostrogoths marched against him, and for the third time, gave the Huns a terrible beating, and drove them across the Danube. In 466, the Huns, under a dependent leader, named Hornidak, crossed the Danube on the ice. This too was unfortunate. The Romans, under Anthemius, forced him to take refuge in Seidica, where he was forced to capitulate. (Sidonius Apollinarius, in Thierry, *op. cit.*, 254, etc.)

The Huns at this time were divided into two well-marked sections. The Huns proper, or Black Huns, in the west; and the White Huns, including the Acatziri Saraguri, etc., in the east. They were roughly divided, probably, by the Don. That both sections, although separately governed, treated each other as portions of one nation, we learn from a curious anecdote related by Priscus. The two brothers, Denghizikh and Hernak, were at issue as to the advisability of making war on the Romans. The latter was in favour of peace, because, as Priscus says, the Acatziri Saraguri, and the other Hunnic tribes, who lived by the Caucasus and the Caspian, were then engaged in a war with Persia; and that it would be folly to engage in two wars at once. I shall not trace out the details of the connection between these western Huns, and the provincials; how the Greeks took numbers of them into their service; appointed several of them to places of trust; affected Hunnic customs, and Hunnic dresses. (See Thierry, *op. cit.*, 1,271, etc.). This was the case with the Huns settled on the borders of the empire, under Hernak. Meanwhile, those on the Dniپر and the Steppes of the Black Sea became disintegrated by civil strife, and probably coalesced with the various tribes around. It was at this time, probably, the Seklers became the dominant tribe of one set of Slaves, the later Bohemians, while, perhaps, the Antæ (Andi?) may have been another Hunnic tribe who did the same in another area.

While the Western Black Huns were thus being dissipated, the Eastern Black Huns were consolidating a fresh power. We now find their main horde divided into two sections—the Kutrigurs and the Utigurs—respectively named from two brothers, the sons of one of their kings, who divided their allegiance between them. They were divided by the Don, the

Kuturgurs lived west of the Marshe of the Mæoter and the Uturgurs to the east of them. Procopius (de Bello Goth IV. 18, Zeuss *Die Deutsche under der Nachbarstamme*, page 713) has shown from the collocation of several authorities that Uturgur or Utigur and Unnugari are used as common synonyms for the same tribe. Again, the Unnugari are also called Unugunduri and Unungunduri. Now as some authors speak of Utigurs and Kuturgurs so we find Theophanes and Anastasius speaking of the Unugunduri Bulgari and the Kotragi. (See Zeuss 719 note.) Constantine Porphyrogenitus in fact tells us that the original name of the Bulgarians was Unungunduri. (See St. Martin's essay on the Bulgarians, who says this name is merely a compound of Hun and Gundur, and compares it with the Burugundi mentioned by Agathias). Again, the great Bulgaria of the old authors is the same land as the country of the Unnugurs. For these reasons I am disposed to identify Utigur, Unnugur and Bulgar as synonyms of the same tribe, and this view is confirmed by the fact that the Bulgarians, when mentioned for the first time, *eo nomine*, are named as if they were old well-known borderers of the Roman Empire. (See Zeuss 710.) Whether the name Bulgar have the etymology argued for in the paper on the Bulgarians or not, it would seem to have been a new name adopted by the Utigurs or Unnugurs.

I have said that Utigurs and Kuturgurs formed originally one race, the general name of which was probably Ogor. It will be remembered that Priscus, in his narrative of the embassy sent by the Romans to the Turkish Khan Dizabulus, speaks of the great nations of the Ogors as living on the Volga. These Ogors were in fact the wave of population that followed immediately upon the Huns of Attila in their invasion of Europe, were in fact the second tide of Huns. We may now continue our historical survey. In 498 and 499, as I have already related in the history of the Bulgarians, the coalition of the tribes of Eastern Huns and Slaves who went by the name of Hunno Vendo Bulgari appeared on the Danube. I shall not retail their history again. At this period apparently Bulgari was the generic name for the Eastern Huns. Let us move on a few years, until about 548, when we find these Eastern Huns divided into the two rival and bitterly striving tribes of the Kutrigurs and Utigurs, the latter of whom more especially seem to have eventually adopted the synonym of Bulgarians. The mutual strife of the two tribes was reported to the Greek Emperor by the Goths of the Crimea, the Gothi Tetraxitæ, who wished him to take advantage of it. The Kotrigurs, who were the nearer of the two to the empire, had been for some time in receipt of an annual subsidy from the emperor. The latter now sent an

embassy to Sandilkh, the chief of the Utigurs, promising him the subsidy if he would attack the Kutrigurs. At first he objected, saying that although governed by different chiefs, they had the same language, the same dress, the same manners, and the same laws as his own people. (Menander quoted by Thierry *op. cit.*, 341.) But the craftily worded taunts of the envoys at length moved him, and he agreed to attack the rival tribe which was closely allied with the Gepedæ. Shortly after the Kutrigurs were savagely attacked by the Utigurs and the Goths and badly beaten, while a large portion of their best cavalry under Kinialkh were away in Mæsia. The latter now made terms with the Romans, who allowed some of them to settle south of the Danube, while others set out to revenge themselves on the Utigurs. The consideration of the Romans for the Kutrigurs, so lately their enemies, drew from Sandilkh, the chief of the Utigurs, a well-worded letter full of signified reproof, which is given at length by Thierry *op. cit.* (348-351). Meanwhile the Utigurs and Kutrigurs continued their suicidal struggle in the steppes of the Euxine. This struggle ended after six years of fighting in the victory of the Kutrigurs, who now turned upon the Romans in revenge for their treacherous correspondence with their rivals, and to regain the annual stipend which had latterly been paid to the latter. The chief of the Kutrigurs was called Zabergan. Gibbon has described in sonorous phrases the victorious march of Zabergan and his followers through Thrace and Macedonia up to the very walls of Byzantium, and how the capital of the Eastern Empire was saved by the skill of the aged Belisarius. After suffering a defeat the Kutrigurs retired towards Thrace, and finding they were not hotly pursued, turned upon its towns, while they extemporised a fleet of very primitive war vessels, described by Agathias, which acted in concert with their army, and they were thus able to ravage the country with impunity, and to return home well laden with booty. When they arrived there they found that the Utigurs had taken advantage of their absence to inflict upon their homes a terrible assault, and thus the strife between the two tribes continued. But it was reaching its end, for both of them fell an easy prey to the Avars, who in 557 invaded Eastern Europe, and in whose empire they became incorporated. The arrival of the Avars put an end to the supremacy of the previous invaders. Sabirs, Sarselt, Hunnugars, Saragors, Akatziri, are all named among their victims, and all assisted in building up their empire. I have already detailed the proof that Avars and Huns were very near akin, and have also summarised the history of the latter until they were finally dispersed by Charlemagne. I shall not here repeat it. Long before their final dispersion their power had been confined to

the plains of modern Hungary and Moravia. In the East, the Hunnugars or Bulgars, under their great chief Chrobat or Chrovat, revolted in 630 and constituted a new Hunnic empire, namely that of the Bulgarians. Either from him or from some other Hunnic leader of the same name I believe the Croats of Croatia to be named, but this fact and many similar ones will best be discussed in some future papers on the Slaves. On the death of Chrobat his empire was divided among his five sons. Four of them emigrated westwards with their people, as I showed in my paper on the Bulgarians, the fifth alone, with his tribes, remained behind on the Volga in Great Bulgaria as it was called. There they continued to be known indifferently as Hunnugars and Bulgars. But the great migration left this remnant very weak, and enabled another Hunnic race which had for some time been under a cloud, namely the Khazars or Akatziri, to resuscitate the supremacy of the White Huns, and to found a new empire, that of the Khazars, to which the Black Huns, Hunnugari or Bulgarians of the Volga, became subject. When, in the year 888, a terrible civil war broke out among the Khazars, eight of their tribes were expelled, and under the generic name of Cabari joined their dependents the Hunnugari. Thierry (*op. cit.* 2,205) tells us that Cabari probably means sons of Caba or Khaba, a well known hero of Hungarian romance, who is made the son of Attila and of a Roman princess. Hungarian philologues derive the name from Kabar or Kobor—*i.e.*, Bohemian Nomade. Among the Cabari the most important tribe was apparently that of the Megeri or Magar, which eventually gave its name to the Hunnugars, or as they are generally known in history, the Hungarians. I have already devoted a paper of this series to their history. They were in fact a race of Black Huns led by a caste of White Huns.

The Khazars and Hungarians were respectively known to the Russians as White and Black Ogors. White and Black being probably here used in their Turkish and Eastern sense as synonyms for dominant and dependent. It was probably from this Khazarian tribe, Megere or Magyar, that the town of Magyar, whose ruins have been described in detail by so many writers, and which was situated in the open country north of the Caucasus, derived its name. I may add to what I said in the paper already cited about the Hungarians that the invasion of the Pannonian plain by the Hungarians in 883, under their Magyar leader Arpad, was only the final completion of a migration that had been in progress for some time. Klaproth, in his "*Tableaux Historiques de l'Asie*," page 278, cites a passage from the *Acta Sanctorum*, describing an inroad by the Hungarians (*Magna gens Hungarorum*) across the Danube in 750, when they advanced

into the Grisons, pillaged and destroyed the monastery of Desser-tina, founded by Saint Sigebert near the modern town of Dissentis on the Upper Rhine. He also mentions, without citing his authority, but evidently from some Byzantine author, how in 838 a numerous army of the Ouggroi came to the assistance of the Bulgarians in their struggle with the Macedonians; that these Ouggroi attacked the Macedonians and were beaten. (*Vide Klaproth op. cit.*, 278). In 862 the Ungri made an attack upon the dominions of Louis the German and pillaged his frontiers. These notices show that before the final march of the Magyars their Hungarian clients and subjects were already known on the Danube and the borders of the German empire.

I may also add that traces of the land of Lebidias, also referred to in the paper already quoted, are perhaps still to be found in Southern Russia. There is a town called Lebedin in the government of Kharkof, but as Lebed means swan in Russian this name may have no connection with the Lebedias. The statement of Constantine Porphyrogenitus that the fragment of the Khazars who broke away taught the Turks (*i.e.*, with him Hungarians) their language, while they also used the Turks' own language, is most consistent with the differences, and at the same time the many affinities there are between the Hungarian language and that of the Kazikumuk, whom we have identified as the descendants of the Khazars.

It seems clear from the accounts that Khazars and Bulgars were very nearly related, thus Nikon, the Russian chronicler tells us the Chualisses (the Russian synonym of Khazars) and the Bulgarians were descended from Lot's two daughters. In the letter of the King of the Khazars to Khasdai, a Jew of Spain, Cozar and Bulgar are made brothers, both being named among the ten sons of Togarmah (D'Ohsson les Peuples du Caucase). The Arabic author, translated by Ouseley as Ibn Haukal, says expressly that the language of Bulgar and Khozr was the same. (*Vide* page 190.) Among the names of Bulgarian princes that have come down to us is Almus. This is the same name as that of the father of Arpad, the stem-father of the Hungarian house. Heten, a Bulgarian name, cited by Schafarik, 167, is the same as Ete, one of the companions of Arpad. While Bela, who occurs prominently, as I showed, in Hungarian history, is made by some the eponymus of the Bulgarians. Having thus traced out the history of the Huns proper, or Black Huns, till the invasion of the Avars we may now go further. East of these Black Huns lay the Saroguri, Sar-Agors or White Huns. Priscus tells us how the Avars fell upon the Sabirs, and they in turn upon the Sarogurs, who thereupon came to the Hunni Acatziri, and having fought many battles with them defeated

them and then sent an embassy to the Romans. (See Priscus *Excerpta de Legationibus*.) These Sarogurs are the White Huns so well known in the history of Persia, and on whom Vivien St. Martin has written such an exhaustive essay. I shall refer to them again presently when I treat of the Khazars, for after conquering them, as I have above named, the two tribes seem to have acted in concert if not actually coalesced. The Sarogurs were, I repeat, pushed on by the Sabiri, whose name occurs at an early date, for I believe it to be identical with the Serbi of Pliny, and Severi of Ptolemy, who are named among the tribes between the Caucasus and Volga. Before the Bulgarians became supreme in the countries north of the Caucasus, that post was filled by the Sabiri or Saviri. That the Sabiri were Huns is clear from the accounts of the Byzantine authors who tell us so in terms thus: "Unni quibus Saber appellatis." "Unni Saber vulgo nuncupati" (Theophanes c. 516-528, *Hist. Mis.*, etc., cited by Schafarik *Slavische Alterthumer* 1,331 note). Jornandes also makes the Saviri a great division of the Huns. Stephanus of Byzantium, speaks of "the Sapires, a people of the interior of the Pontic region now called Sabires." (Vivien St. Martin *Etudes Ethnographiques et Geographiques sub voce Sabirs*.) Priscus mentions them as living east of the Volga, and as having been among the first conquests of the Avars. In 515 they broke through the passes of the Caucasus and ravaged Armenia Cappadocia, Galatia, and Pontus, as far as Eucha, which they however failed to capture. Twelve years later Boarex, the widow of Balachus, who ruled at the foot of the Caucasus, and therefore most probably the chief of the Sabiri, sided with the Romans, while he sided with the Persians. (Schafarik *op. cit.*, 331.) In 531 they again plundered Armenia, Cilesia, and the Roman frontiers. Procopius places them beyond the Zikhs, *i.e.*, in the lower basin of the Kuban towards the Mæotis. In 558 the arrival of the Avars put an end to their dominion. Some of them were driven into the Caucasus, whence the Romans a few years later transplanted them to the Cyrus or Kur (Menander cited by V. St. Martin *op. cit.*) Although no tribe of the name remains apparently in the Caucasus, yet the valley of Tchorokh, which is known to the Georgians as Sber, most probably preserves their name.

One portion of the Sabirs, as I have said, sought refuge in the Caucasus, but, as usual, another and probably a much larger section drifted westwards and settled on the Danube. A body of these Sabirs of the Danube served in the army of Heraclius against Chosroes in A.D. 622. Said Ibn Batrik calls them Saouariah. (Schafarik *op. cit.*, 1,332 note.) These Sabirs of the Danube now fell under the dominion of the Bulgarians, and

with them passed into Mæsia in 678. Theophanes tells us that they then settled on the coast between the Hæmus and the Danube. The word Sabir or Sebi became equivalent in Bulgarian to *rusticus*, peasant, or cultivator, and is still known in Dalmatia and Servia as Sebar, sibor, cipor, etc. (Schafarik, *op. cit.* 332.) I believe the Slavic nation of the Serbs were named from them as their neighbours the Slavic Bulgarians, were named from the Hunnic Bulgarians. With the Saviri and Saroguri are sometimes mentioned the Sarselt. It has been suggested that this is a mis-reading for Barselt, a Hunnic tribe placed by Theophylactus on the Volga. Barselt is in fact Barzilian, a tribe closely allied to the Khazars; thus Moses, of Chorene mentions Venaseb and Sourhag as kings of the Khazars and Bazeleens. Bizal, a corruption of the same name, is named as one of the brothers of Khazar the eponymous ancestor of the Khazars, mentioned in the well-known letter of the king of the Khazars to the Jew Khasdai. The Khazars are also said to have come from the land of Bezelia, when they invaded the west. All these tribes, Sabirs, Saroguri, Sarselt and Khazars formed one class, for which, as I have said, the name White Huns is a good generic name. In regard to the Khazars I wish to withdraw a theory I formerly entertained, which led me to identify them in a paper of this series with the Circassians. Our science is so difficult, and our results very often so tentative, that it prevents our feeling very sad at having to modify our views after increased study. Mrs. Guthrie surely, *facile princeps* among learned lady travellers, in her account of the Crimea has the following sentence: "The Byzantine writers mention a Tsherkessian prince who landed at Caffa with a number of Kesses his subjects, and took possession of this city, although they do not tell us when, but this event, loosely as it is stated, becomes interesting by its perfect coincidence with the account the present princes of Circassia (as Europeans pronounce the word) give of themselves, who say they are descended from a prince named Kess, who anciently reigned in the Taurida. The Cuban Circassians, according to this pedigree, are sprung as they assert, from the eldest son of the Tauri prince called Inal, while the Cabardian Circassians boast their descent from his second son Chaombek, that is to say that the present chiefs or princes of these two countries in the Caucasian mountains claim this origin, not the people at large, a piece of curious information which I owe to Mr. Ellis' excellent memoir accompanying his valuable map of the Caucasus." (Guthrie, *op. cit.*, 146.) Klaproth tells us that he gathered from verbal communications with Circassian chiefs, that their progenitor was called Arab Khan, an Arab prince who came with a small retinue from his native land to

Schantschir, a town long since destroyed, which was situated not far from Anapa, in the country of the Nautuchasch, and whence the princes of the Temirgoi and all the Teherkessians, according to their own accounts, derive their extraction. ("Travels in the Caucasus," English translation, 312.) This account agrees with that of Mrs Guthrie, except in the name, in which she is doubtless mistaken. Klaproth goes on to say that Arab Khan was succeeded by his son Churpataga, who left a son named Inal, surnamed Nef or the squinter, and who is regarded by the princes of both Kabardahs as their progenitor. He also very properly doubts the notion of their princes having come from Arabia, although he says their progenitor may have been named Arab Khan. (*Id.* 313.)

Again Pallas, in his travels in the Southern provinces of Russia, (English translation 1,392) says: "The Kabardines consider themselves as descendants of the Arabs, and it is not improbable that they are the remains of those armies which were formerly sent to the Caucasus by the Caliphs; according to others they are the descendants of the Mamelukes. . . . It deserves to be remarked that the families of the Circassian princes considered Inal as their common ancestor, and described him as a mighty Khan, whose former residence was the city of Shantgir, now in ruins, between the rivulets Nepil and Psif. From this Inal, the princes of the Great and Little Kabarda derive their genealogy in the following manner." Then follows the genealogy. Thus these three authors are at one in reporting the traditional origin of the Circassians. In recently reading the "Travels in the Western Caucasus," by Mr. Spencer, who lived a long time among the Circassians, and who probably knew them more intimately than any modern traveller, I found a passage which corroborates these accounts and to my mind fully explains them. This account I cheerfully adopt. "The Circassian or Mameluke dynasty in Egypt lasted from 1300 to 1517. Among these Mameluke rulers we find in 1453 one who bore the name of Inal, and it appears was not the son but relative of Arab Chan. This chief, instead of being of Arabian descent, was in reality a Mameluke Khan of a powerful tribe of Arabs, and known in history as Arab Khan from the bravery of himself and his followers; his influence became so formidable that he made an attempt to seize the reins of sovereign authority and rule all Egypt; but not succeeding, he was compelled to fly, and escaped with his principal adherents to the country of his ancestors, where, having formed a settlement between the Kuban and Anapa on the Black Sea, he had built a large town. The site is still pointed out on the banks of the Uefil, and seems to have been regularly fortified with ramparts, moat, and several forts,

which now appear like small hills descending to the marshes of the River Kuban." (Spencer, *op. cit.*, 1, 12 and 13.) Having thus traced out the stem father of the various Circassian princes, both those of Circassian proper and of the two Kabardas, we may proceed. The primitive seat of the whole race is the cluster of mountains known as the Beshtau, and, as I mentioned from Klapproth, in my paper on the Khazars, it was only in the sixteenth century that they migrated in large numbers to the two Kabardas. This was due, probably, partially to internal commotions, but more to the encroaching spirit of the Krim Khans. On the arrival of Arab Khan and his family the power of the Golden Horde had decayed, was at a very low ebb, and the warlike Mameluke princes had little difficulty in extending their influence over the neighbouring Tschetchenzes, the Abkhazians, and the various Tartars of the mountains, the Basians, Kharatshai, etc. But at length the power of the Golden Horde partially revived among the Krim Khans. The Circassians now began to feel their power and to become more or less subject to them. It was probably under the influence of this pressure that the migration of the Kabardians began, as I mentioned in the already cited account of the Khazars, and continued long after.

This migration of the Circassians into the Kabardas is therefore quite recent. Now Ichoshaphat Barbaro, who travelled in the Caucasus in 1474, and therefore before this migration, applies the name Kabarda to the district still known as Kabarda. Again Kabarda is not known as a tribal or generic appellation, so far as I know, to the Kabardians themselves, who, like the other Circassians, call themselves Adighé. They are called Kabardians, as the English are called Britons, because they live in the Kabarda. They were not known by that name until the sixteenth century, and therefore, as I have said, I must cancel their identification with the Kazarian Kabari, which I formerly favoured.

Let us next inquire who inhabited the two Kabardas before the advent of the Circassians in the sixteenth century. To this question the answer is not difficult. In the slate and limestone ranges near the sources of the rivers Kuban, Baksan, Tschegem, Naltschik, Tscherek, and Argudan, are certain Turkish tribes who are called by the Circassians Tata Kushiha, but by the Georgians Basiani. (Klapproth, "Journey to the Caucasus," 280.) Under that name are included the Balkars and Tchegems.

Further inland towards the south-west is another tribe of Turks named Karatshai. They live dispersed at the north foot of the Elburg, on the rivers Chursuk, Kuban, and Teberde.

Klapproth has examined the traditions and customs of these

mountain Turks in great detail. Of the Basians he says: "Their elders report that they were long ago settled in the steppe of the Kuma as far as the Don, but at what particular time they are unable to state. Their capital, which is said to have been very magnificent, was named Kirk Madshar, which in their language signifies the forty stone buildings or the forty four-wheeled waggons, according to the two-fold interpretation that may be given to Madshar. They assert that the ruins of Madshar, which yet subsist, are the remains of this city. Here reigned several of their princes who, at the commencement of the Hidjira, lived at constant enmity with their neighbours, and were at length expelled by them, on which they retired to the great Kabardah, whence they were in the sequel driven by the Circassians, and being divided into detached bodies, were necessitated to fix their habitations on the highest mountains at the sources of the Kuban, Baksan, and Tschegem. One portion of them, however, still continued on the Malka, and did not remove till a later period to the source of the Tscherek, whence it yet retains the name of Malkar or Balkar." (*Klaproth, op. cit.*, 281.)

In regard to the Karatshai he says: "They assert that they removed from Madshar to the district which they at present inhabit, before the Circassians came to the Kabardah, and derive their name of Karatshai from the chieftain under whose conduct they settled on the Kuban. . . . Their two principal villages are Karatshai, at the influx of the Chursuk into the right of the Kuban, which contains about 250 houses and another of about 50 houses, situated to the west of the Upper Kuban on the little river 'Teherde. The latter is of recent date, having been founded by refugees from Karatshai, who quitted the principal village for fear of the incursions of the Kabardians." (*Id. op. cit.*, 284.) These two paragraphs, which may be confirmed from other authorities, will suffice to show that the Steppe of the Kuma, the Kumestan of the old authors, was comparatively recently occupied by the Basians and Karatshai. When these two tribes were driven to the south-west it is reasonable to suppose that others of the same race would be pushed into the champagne country that lies between the Caspian and the Caucasus, and we do in fact meet here with Turkish tribes whose rulers were long the paramount lords of Daghestan, who were styled by the Arab travellers Kumuks, and who are now divided into two branches, the Kumuks and the Kaitaks, to be carefully distinguished from the Kazekumuks and Karakaitahs, the latter Lesghian and not Turkish tribes of whom I shall have more to say presently. Both Kumuks and Kaitaks occur frequently in the history of Shirvaman, of Russia

and of Turkey, the sovereign of the former was styled the Schemkhal, that of the latter the Usmei.

In regard to the Kaitaks, who are much inferior in numbers and power to the Kumuks, I believe that they are a comparatively recent split from them. Their name, so far as I know, does not occur in the pages of the older Arabic writers. I believe it to be like many other tribal names among the Nomades, derived from some chieftain's or some clan's name. In confirmation of this I may mention that one of the princely houses among the Circassians is called Kaituck (Klaproth, *op. cit.*, 281), and Reineggs constantly treats the name Khaitak or Kaitak as modern, and says that the district of Kaitak was anciently known as the principality of Saul.

When the Mongols founded the Khanate of the Golden Horde, they drove the Comans out of Kumestan, some of them into the hills to the south-west, others into the Krim, others again into Chundary, in Hungary, and lastly drove others into the country now occupied by the Kumuks and Kaitaks. All these fragmentary Turks, I believe, were portions of the ancient Comans or Uzes, about whom I have written a paper in this series.

Klaproth investigated with some care the relationship of the many men's names that occur in the Russian chronicles as leaders of the Comans. He avers, in the first instance, that they are not Nogai names, and infers that although the language and blood of the Comans were undoubtedly Turkish, that their leaders were not so. In this I followed him. I am now disposed to question this conclusion. The fact is the names of nearly all the Turks that are easily accessible to us, names patronised by Ottomans, by Krim Tartars, and by Nogais are derived from the Koran. They are in fact merely Arabic and Mussulman names, and not Turkish at all. If we are to look for unsophisticated Turk names they are not easy to find. I believe the Coman names preserved by the Russian chroniclers are in fact pure Turk names, for we know from the history of the Golden Horde that it was only under Bereke and Uzbek that the Turks of Kiptchak adopted Islamism in any numbers. Klaproth acknowledges that three of those names are commonly known as family names among the Karatshi. Pallas says they are found among the Balkarians and Karguutzi—*i.e.*, Karatshi; while as to the numerous instances quoted by Klaproth of their use among the Circassians, I believe that like the other northern Caucassian tribes the Circassians were subject to the Comans or Uzes, and that it is to this connection that the tradition chiefly refers when it makes the princes and commonalty among the Circassians have a different origin.

Let us continue, we have traced up the various sporadic Turks

of the Northern Caucasus to the Comans. Now the history of the migration of the Comans or Uzes across the Volga is well known, and I have detailed it in my paper on the Comans. We know that when they so crossed the river they invaded the country of the Khazars and partially dispossessed them.

When the Arabs invaded the Caucasus they apparently gave the name of Kumuk to the tribe that occupied the seaboard between the Caucasus and the Caspian. As I have said, the name Kaitak was not then known in this area, while Kara-Kaitak, which probably like Kara-Tcherkess, simply means in Eastern phrase the dependent or subject Kaitaks, was not known either. That name is now applied to those Lesghs who are dependent on the Uzmei of the Kaitaks. Now as Kaitaks and Kumuks are essentially the same tribe, so the Kara-Kaitaks and Kaze-Kumuk are also the same. Their dialect or language is the same according to the best reports, and I have no doubt that when the Turks were gradually pushed south of the Terek that these two tribes were one, as Reineggs suggests, and the common name by which they were known to the Arabs was Kumuk. When they conquered and converted a portion of these Kumuks they styled them Kaze-Kumuks, or believing Kumuks, while the unconverted were styled Kiafir Kumuks. So that in the Kaze-Kumuks we have to a great extent the representatives of the ancient Western borderers of the Caspian.

This same border land of the Caspian was the great focus of the Khazars, from whom the Caspian received the name of the sea of the Khazars. Schems ud Din, of Damascus, mentions four towns in the country of the Khazars, namely, Itil, Semender, Balandjar, and Khamlidje. ("D'Ohsson les peuples du Caucase," 33 note.) Itil, which I described in the paper on the Khazars, was on the Volga, and was probably replaced by Astrakhan. Semender, was the later Tarku, the capital of the Kumuks, and the residence of the Shamkal. (Reineggs, 1, 104.) Again, Derbend was a possession of the Khazars, and from it they seem to have organised their many raids upon Armenia. They were driven thence by the Arabs. (Reineggs, id. 133.) It was once called Serir el Dhenab (Reineggs, id. 201). The part of Daghestan lying north-west of Derbend and the province of Kumuk, with the greatest part of North Western Caucasus, appear to have belonged to the Khazars, whose possessions extended a considerable way in the plains near the Sea of Azof, and nearly as far as the Euxine. (Reineggs, 101 and 2.) One of the extraordinary facts in Khazar history is that their reigning house was Jewish, and that a great number of Jews were found among them; this is still the case with the strip of country bordering the Caspian, the homeland of the Kaze-Kumuks, so

much so that a work has been written to prove that these Jews are the remnants of the ten tribes. All these facts seem to point to the conclusion that the Kaze-Kumuks are the descendants of the Khazars.

I have now examined the three great divisions of the Hunnic race, the Black Huns or Huns proper, the White Huns, and the Avars. I have tried to show that each of these divisions left a portion of itself in the Northern Caucasus, the Andi being the descendants of the Huns proper, the Kaze-Kumuks, Akutchis, and Kubetchis, of the White Huns and the Lesghian Avars of the Avars. All of these Lesghian tribes have a large common element in their languages, and this common element has great affinity with the Ugrian tongues. It remains to add another link to our chain of proof. We have made the Hungarians no less than the Andi to be descendants of the Huns, the former being a race of Huns led by a caste of White Huns, the latter being Huns simply. Hungarian, as is well known, is a typical example of one section of the Ugrian tongues. This being so, we ought to meet in Hungarian with a ready linguistic test to apply to Hunnic names, etc. This test has been applied by Klaproth, and I again extract his results.

HUNNIC NAMES.	HUNGARIAN.
Attilas or etzel.	Atzel, steel; edzeni, to temper iron; edozriz, water in which iron is tempered.
Mouzdionk Moutsak, father of Attila.	Mentseg, protection, deliverance.
Ernak, son of Attila.	Hir-nagy, great glory.
Deggitzik, son of Attila.	Tenyészes, fertility; tenyézem, I reproduce.
Edekon, grand officer of Attila's court.	Etek, food.
Oktar, uncle of Attila.	Oktatom, I instruct or teach.
Sandil, prince of the Uturgurs.	Sandal, one who squints; sanditani, to squint.
Kinialos, prince of the Kuturgurs.	Kinalas, offer invitation.
Sinnion.	Szinni, coloured.
Zabergan.	Zavar, a bolt, a lock; zavaritom (i. e., mèle?)
Balas.	Bal, a bundle; valasz, judgment.
Kurilakos.	Korul, lazy, indulgent to those about one (circum indulgens).
Balak.	Balog, left (as distinguished from right).

A Hunnic word that occurs in Faustus Byzantinus, an Armenian author of the fourth century, is Vadon, a steppe. M. Szabo tells us the same word with the same meaning is still found in Hungarian. (Thierry, 1,243, note.)

In conclusion, to sum up our facts, it would seem that the White Huns were the first of the race to appear on the Eastern borders of Europe. If the Akattiri and Basilies of Herodotus are to be identified with the Akatziri or Khazars and the Berzelians of later writers,

they must have been old occupants of the Caspian borders. At all events we know that Serbi are mentioned by Pliny, and Severi by Ptolemy, while the Akatziri are several times named by the Roman writers before we have any mention of Huns. As these white Huns were the first of the invading Hun army, we are not surprised to find that those who represent them are much sophisticated by mixture with other tribes, nor are we surprised to find that this mixture should be with the Mitsgeghi and other tribes whom we have elsewhere identified with the Alans, the Nomades who immediately preceded the Huns.

They were succeeded by the Black Huns, much more purely Hun in blood, and as we find in their descendants much more Ugrian in language. They in turn were succeeded by the Avars, who added to their Ugrian features others of a Samoyede character. Now if we strip the country stretching from the Volga to the Altai mountains of its Turkish inhabitants, as we may well do, for we have evidence already adduced in this series of papers *that the Turks first left their homeland in the Altai* about the fifth century—if we so strip it we shall have a vast area from which these Hunnic tribes undoubtedly sprang—an area called Ibir Sibir by the Arabs, and so called, as Vivian St. Martin has argued, and as I believe, from the Avars and Sabirs. From this area they were driven by the gradual Western pressure of the Turks, and they in turn drove the Alans further into the West. They were in fact the pre-Turkish frontagers both of Persia and of Eastern Europe. In a paper on the Avars I have already adduced the evidence for making the Juan Juan of the Chinese authors the same race as the Huns and Avars of the West. I have already referred to the very large Ugrian element there was among the Huns, as there still is among their descendants, but neither were pure Ugrians. It seems incredible that a race such as the Voguls or Ostiaks, the typical Ugrians of our own day, should have conquered the Goths and other hardy and warlike Germanic tribes, and even joined arms upon equal terms with the Roman empire itself. Nor do I believe they could have done so if they had not been led by a caste of warriors of a different race, and we accordingly find that, although a large portion of the blood and language of the Huns was Ugrian, there was super-imposed on this an element which was not Ugrian, this I believe was Alanic. That in fact the Ugrians were led by a caste of Alans, and that this caste is what the Byzantine authors refer to when they tell us that of the princes of the Avars some were Var and some were Chunni. The Alans were the great leavening caste of nearly all the tribes which were mixed up in the race revolutions of the European and Southern Asiatic areas before the fifth century, and about them

I have a great deal more to say on another occasion. I have now done. Having thrust back the Mongols and Turks beyond the Altai, I have tried to show who occupied the vacant area before them, and have tried also to affiliate the various tribes, who flocked into and across the Russian steppes from the fifth to the nineteenth century, to their several types. I am conscious of having committed many errors, but the subject is profoundly difficult, and I would conclude in words used by M. Wolff, the author of a recent work on the Mongols.

Vive, vale ! si quid novisti rectius istis
Candidus imperti, si non, his utere mecum.

DISCUSSION.

Mr. HYDE CLARKE, in commenting, took the opportunity of communicating his own recent observations, considering the Khunzag to be equivalent to Huns, Alans, and Avar. He said the class, so far as language was concerned, was not Ugrian, though Ugrians took part in the settlement of Hungary under the leadership of the Avars, as stated. The class of languages called Lesghian, including the Avar, Khunzag, Kazi-Kumuk, etc., belonged to the Vasco-Kolarian, being allied to the Basque of Spain, the Kol, Sonthali, Uraon, etc., of India, the Houssa, Mandingo, Bambarra, Yarriva, Ashantee, Fantee, etc., of West Africa, and most probably the Korean. The Chetamache and possibly other American languages were related to this stock, which is of an early pre-historic class, and one of those which took part in the universal migrations. Its chronological place appears to be previous to the Dravidians. In an ethnological point of view the Basque and Caucasian members are now white, but he was inclined to believe their predecessors, *in situ*, were dark like the remaining members. Besides the transmission of language it was to be noted the Vasco Kolarian nations were marked by their warlike propensities. The Basques had resisted the Romans and now contended with the Spaniards. The Huns and Avars had taken part in the destruction of the Roman empire, and the Lesghians had lately contended under Shamyl against the Russians. The Koreans had lately resisted the English, Americans, and French. The Sonthals had been in rebellion against us, and last year again threatened. As to the West African nations they were then fighting for and against us. - The Korean and Ashantee numerals showed an unexampled conformity. It is quite possible that the theory is right that the Lesghians are the Pe-lasgi of antiquity, taking part with the Hellenes in destroying the Caucasian settlements, as the Avars had done with the Goths in attacking the Roman empire. It is a subject for investigation whether the English did, as tradition states, pass through the Caucasus, for there are circumstances of race and language which favour the idea. It may be mentioned as a correction that Bede, in his Ecclesiastical History, names the Huns as among the invaders of Britain with the English ; but these must have been the Hunsing, one of the great branches of the Frisians. With regard to the Ugrian allies of the Avars he had found facts which pointed to their *habitat*. In East Nepal and other

districts of the Himalaya were languages allied to the Fin, Magyar, Ostiak, Lap, etc. The Magar he considered to be the same name as the Magyar. In the future enumeration of the Ugrian languages the Himalayan congeners will have to be included. It is remarkable that they include examples of all the dispersed languages and dialects from the Arctic Sea to the Danube. It was possible that a migration from the Himalayas supplied the Avars with their Magyar allies, and that the Lesghians, being only a ruling class, had by intermarriage lost their language and acquired the Ugrian. In Russia, the Waring language and stock had died out and been superseded by the Slavonian. The Kazi-Kumuk has affinities with the languages of the Nile region, and indeed he had traced African congeners for all the Caucassian languages except the Cherkess. The Lesghian class showed the same wide diversities as their West African representatives. He must add that it had not been noted that near the Magars was a branch of the Limbu, who may after all have given the name of Hun, and not the Khunzag.

Mr. JEREMIAH, JUN., was glad that the members had the opportunity of hearing this communication read, as most of Mr. Howorth's papers on the Nomades were unfortunately taken as read and then printed in the "Journal," without any comments being appended by those who would probably offer them, were they put through the same process as most other papers are. What really seems inconsistent in the views of Mr. Howorth is his relying upon, in his previous papers, as an authority upon European ethnology, the notorious Klaproth, who so well succeeded in misleading England and Russia in the manufactured maps of Central Asia, while ignoring him as an ethnologist in the paper just read. We have yet to learn who were the original Majiars, and whether there is a larger infusion of them in the people known to us at the present time as the Huns than of the descendants of the other Nomades who infested Central Europe. The difficulty of solving this problem is the common difficulty in all questions relating to the origin of individual communities in Europe. The name *Hun*, for instance, is not yet definitely known to occur between the vast space of time that intervened between the fifth and ninth centuries. Again, *Hun*, as a distinguishing word, stands in the same relation to the *Hungarians* or *Majiars* as *Welsh* to the *Cymry*. Both names are foreign to the people designated, and similarly the Huns call themselves Majiars, and the Welsh Cymry. But what Majiar and Cymru may mean, or what were the original forms of these words, or who were the people thus originally distinguished from their neighbours, are the knotty points to be cleared away. The forces of Attila, composed of remnants of many tribes, must have done much towards entangling the numerous peoples they overcame; the ethnologist, therefore, is courageous who attempts to make all such matters involved in the paper as we have heard read this evening conformable to the conclusion of Mr. Howorth; as it yet remains to be decided how far its author has succeeded in fully estimating the extent of that intermixture. In the opinion of the speaker much more requires to be done, and all must feel regret at the present communica-

tion being the last upon the Westerly Driftings of the Nomades in Europe.

The Director also read a brief note on Implements from St. Brieuc, by M. S. Hénu.

The President drew the attention of members to two Maori Skulls, found in a cave near Auckland, New Zealand, presented by Mr. Gould Avery to the museum of the Institute.

The following communication was read from Major-General Scott, C.B., relative to the formation of an Ethnological Museum, in connection with the Annual International Exhibition.

LONDON INTERNATIONAL EXHIBITION, 1874. *The ETHNOLOGY and GEOGRAPHY of the BRITISH EMPIRE.*

1. Her Majesty's Commissioners have resolved to commence, in connection with the series of International Exhibitions, *permanent* collections which shall illustrate the ethnology and geography of the different portions of the British Dominions, and ultimately form a great National Museum of the Empire upon which the sun never sets. They will be arranged for the present in the galleries of the Royal Albert Hall. Many portions of the Empire are inhabited by aboriginal races, most of which are undergoing rapid changes and some of which are disappearing altogether. These races are fast losing their primitive characteristics and distinguishing traits.

2. The collections would embrace life-size and other figures representing the aboriginal inhabitants in their ordinary and gala costumes; models of their dwellings; samples of their domestic utensils; idols; weapons of war; boats and canoes; agricultural, musical, and manufacturing instruments and implements; samples of their industries, and in general all objects tending to show their present ethnological position and state of civilisation.

3. It is proposed to receive for the Exhibition of 1874 any suitable collections which will be grouped and classified hereafter in their strict ethnological and geographical relations. As, however, there is at present great public interest in the various tribes inhabiting the West Coast of Africa, including the Ashantees, with whom this country is at war, all objects relating to the Ashantees, Fantees, Dahomeys, Houssas and the neighbouring tribes are especially desired. The Indian Empire, the Eastern Archipelago, and the islands of the Southern Hemisphere are also able to afford abundant and valuable materials for the proposed Museum, of which it is believed that the nucleus can be formed at once from materials in private collections.

4. Her Majesty's Commissioners confidently appeal to the civil, military, and naval officers of the British Service throughout the Queen's dominions to assist them in these collections.

5. Her Majesty's Commissioners have secured the services of eminent gentlemen to advise them from time to time in giving effect to these intentions.

It is requested that offers of gifts and loans of objects should be made known at once to the Secretary of Her Majesty's Commissioners, Upper Kensington Gore, London, S.W.

The meeting then adjourned.

JANUARY 13TH, 1874.

Professor BUSK, F.R.S., *President, in the Chair.*

THE minutes of the previous meeting were read and confirmed.

The following new members were announced: J. WALHOUSE, Esq., F.R.A.S., Randolph Crescent, Maida Vale; and RANDALL JOHNSON, Esq., Tunstead, Norfolk.

The following presents were announced, and the thanks of the meeting were voted to the respective donors.

FOR THE LIBRARY.

From the SOCIETY.—Bulletin de la Société Impériale des Naturalistes de Moscou, No. 2. 8vo.

From the DEPARTMENT OF STATE, CENSUS OFFICE.—The Statistics of the Population, Social and Vital, Industry and Wealth of the United States, in 3 vols. 4to.

From the GOVERNMENT.—The Bengal Government Selections, 1872. 8vo.

From the ACADEMY.—Bulletin de l'Académie Royale de Copenhagen, No. 1, 1873.

From the IMPERIAL ACADEMY OF SCIENCES OF VIENNA.—Sitzungsberichte philos.-histor. classe, 72 and 73 band, heft 1-2; Ditto Math.-naturw. 1872, 1, 2, and 3, abtheil, Nos. 6-10; Ditto, ditto, 1873, 1 abtheil, Nos. 1-5; Ditto, ditto, 2 abtheil, Nos. 1-3. Almanack 1873. 8vo.

From the EDITOR.—Nature (to date).

The Director read the following papers:

The NAGAS and NEIGHBOURING TRIBES. By S. E. PEALE, Loc. Sec. Anth. Inst. [With plate xxv.]

THE tract inhabited by the so-called Nagas lies mainly between lat. 25 N. to 27 deg. 30 min. N., and long. 93 deg. 30 min. E. to 96 deg. E.

To the east lie the Singphus (Tsingpos or Chingpaws), who are a distinct sub-race, and have strongly marked differences in language, physique, and customs; they are called in Burma Kakyens. To the north of the Naga Hills lies Asam, and to the west there are various tribes of Mikirs and Jyntias; while to the south the boundary is not clear, and Nagas seem to merge more or less into the surrounding Turanian races about Manipur and to the east of it. The inhabitants of this tract, though called Nagas, are divided and sub-divided to such an extent that few parts of the world, I should suppose, can present such a minute tribal segregation.

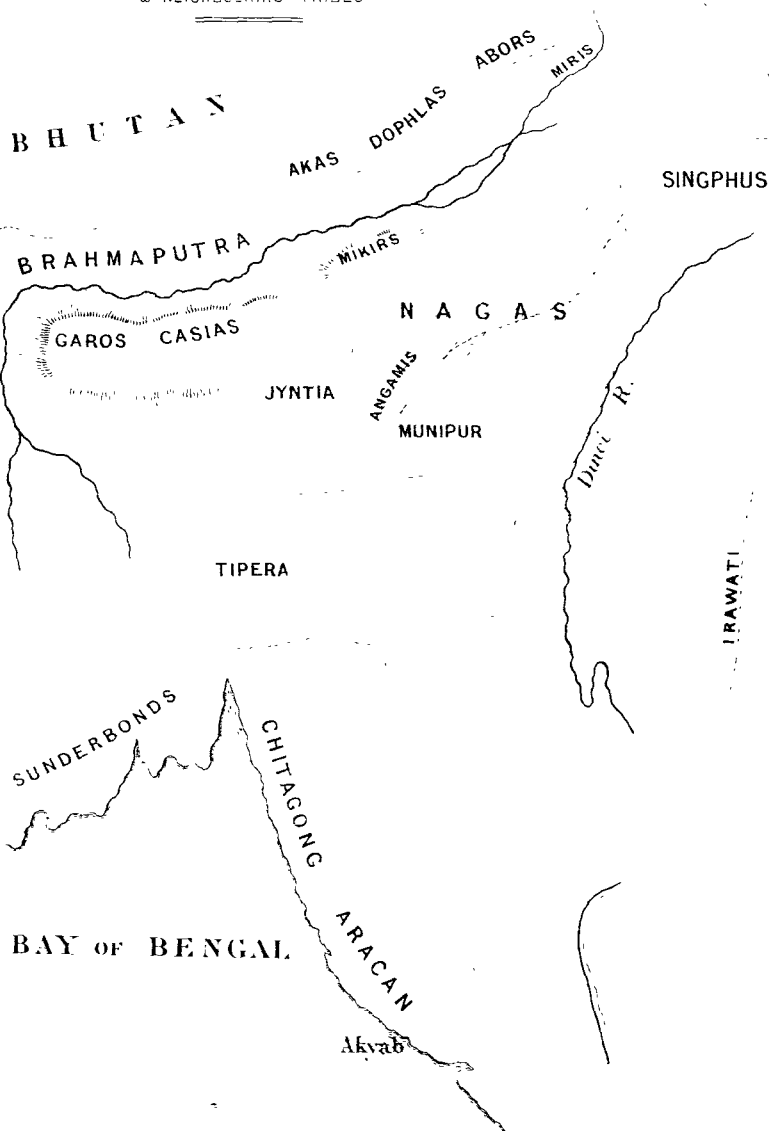
Here and there groups of villages and even tribes are known to the Asamese and others by a general term, such as "Angamis," "Rengmas," "Latus," &c., but these are again cut up into smaller communities owning no definite allegiance to any one in particular.

Occasionally a tribe may consist of twenty or more villages—all speaking the same dialect, and ruled by one head chief; on the other hand many tribes—especially near me—consist of but four villages, and even as low as one; and in other cases, again, these villages have no recognised Raja at all, but, instead, are governed by headmen, called Kunbows (or Khunbau). There is considerable variety in the systems that obtain, and still greater in the numbers that constitute a "tribe." My acquaintance with these hill men is more limited than I could wish, but, as far as I can see, they are at root the same, and what differences we see are mainly due to the singular isolation which has existed for long periods.

The area lying between the Irawati, Asam, and Bengal is mainly composed of densely-wooded hills of moderate altitude, and is also subject to like climatic conditions; the S. W. Monsoon, sweeping across the entire country, literally deluges it with water taken from the Bay of Bengal, and, with the hot sun, conduces to a rank vegetation; partly, perhaps, in consequence of this, most of the villages are perched on hilltops, on the shoulders of spurs, and in the rains (say May till October) communication is at a standstill. There seems hardly a flat stretch of land anywhere, all is hill and valley, and thus the system of cultivation is mainly by what is called jooming,

(Rough Sketch)
 Map of the
 NAGA TERRITORY
 & NEIGHBOURING TRIBES

KHAMTIS
 OR
 SHANS



where forest is felled and the site used for two years only, when, in consequence of the growth of rank weeds, fresh forest is again doomed, and a system of permanent culture of one spot is impossible. In fact there is a remarkable and direct connection between all the peculiar customs of these strange people and their physical surroundings.

The two main facts to remember first, however, are—that the word “Naga” has a definite geographical limit, and that, secondly, the race so designated is subdivided into literally innumerable independent tribes, who are constantly at war with each other.

A very common and conspicuous feature of the Nagas, Garrows, Kukis, Lushais, and other hill races of this part of S. E. Bengal, is their custom of taking human heads, either by regular warfare, raids, or casual surprises. Not only does the custom seem almost universal among them, but it has obviously existed for some ages in its present form, and is really the cause of the strongly-marked variations in both language and physique that exists among these Naga tribes, no two of whom are really alike.

It is often supposed (even here) that these raids and murders are due to revenge, disputes, or blood feuds, and that there is always more or less of a personal element in the affair, than which there could hardly be a greater mistake. Occasionally there are causes, but by no means always; and among the tribes near here, probably not more than half, if as many, have any grudge personally against those they kill. Among certain tribes peace may be the rule and war the exception, while among others again it is the reverse; other tribes, again, seldom fight together seriously, whereas some are at perpetual enmity.

Most of the Naga tribes, with which I am acquainted, tatoo more or less, some on the face, some on the body, and to obtain this “Certificate of Manhood” they must present their Raja with a human head, always hereabouts a Naga’s, and generally belonging to a tribe not related. How they obtain this is nobody’s business; perhaps a young man’s sweetheart has rallied him on his clean, girl-like face, and he takes his dau, spear, and cooked food, and lurks near a spring on the territory of another tribe, till some unfortunate woman or child comes within reach, and there is not time for a death cry, and, presenting the head to the Raja, is tattooed with the *ak* or mark of that tribe, and henceforth is a man.

At other times a party of youths who desire to get their *ak* will arrange to waylay a pool where the people of another tribe are certain soon to fish, and, if a larger party come, they go off quietly and unseen; but, if a small party, they watch their

opportunity and rush out, securing, perhaps, three or four heads, though perhaps losing one.

Again, the young men of several villages of the same tribe or allied tribes, often combine to raid a more distant village or "chang," occasionally with success, but at other times with none, or, even worse, may get badly cut up in turn *en route*. With such parties there are usually older men to show the way, and who also wish to score extra decoration or obtain plunder.

Between such raids for heads and regular warfare it is difficult to draw the line, especially as the heads of the slain are invariably taken in all cases. Waylaying or ambush is the most common device; quarrel or dispute is obviously not the cause then, as it is generally impossible to say whose head will be taken.

I think it all the more needful to draw your attention to this, inasmuch as the subject is not yet fully understood in this light, even here. The pernicious system of constantly changing the officers in charge of our district precludes the possibility of their obtaining much information, and mistakes of the executive are thus liable to occur.

Occasionally there are regular tribal wars, and also, perhaps, family blood-feuds, and thus a combination of causes produce the singular phenomena of small isolated tribes perched on peaks, and relying almost entirely on their own resources. To such an extent, too, has this been their past system, that isolation has developed well-marked lingual and physical variation in almost all cases. Less so at the edge of the plains, perhaps, than further in, as the villagers near Asam often meet there.

As an almost necessary consequence of their whole mode of life they are a fine, hardy, and active race, excelling in all that relates to forest lore and labour, while, on the other hand, conspicuously deficient in all the so-called arts, as pottery making, working in metal, writing, etc. Going nearly naked and really not needing much covering, weaving is at a low ebb, at least in the tribes to the east of Asam.

But, perhaps, the most singular feature is the almost total absence of agricultural implements (as such); with the *Dáu* or p-shaped axe literally everything is done, from the first clearing of the forest to the last item. There are only two agricultural implements at all used, as far as I can ascertain, one is a weeding loop made of a slip of bamboo, and the other a small iron hoe, about the size of a dessert spoon, also used for weeding by girls and women. The soil before planting is scarified by the *dáu* or p-axe, and when the seed is put in it is dropped into a small slit made by this tool-weapon.

In actual mental capacity they are rather low, for, though

smart or cunning in anything that relates to their ordinary life, they are soon lost when trying to go beyond, none that I know can count above ten, their numerals go so far only,* and vary at every twenty or thirty miles distance. (Of this I am trying to procure statistics.) I have often paid them in mixed coins small sums, and very few, I find, can do even the simplest sums in addition. They will sit in the shade of a tree, doubling down their fingers till quite bewildered. Only yesterday, the brother of a Raja, while informing me of the loss of three of his sons and a brother, who were killed in an ambush while out for heads, tried to convey the number thirteen, and did so by first holding up both hands open, and then holding three toes together, at the same time cautioning me not to forget the five fingers that held the three toes.

Their ideas of supernatural beings are on a par with all this, their word for God (here) is Harang, which also stands for angel, goblin, etc., and he is simply a sort of will-o-the-wisp, who delights to torment them, and can be generally propitiated by eatables placed at the wayside.

Properly, they have little or no religious feeling, such as we understand the phrase, and their ideas on these questions are generally so vague as to be often quite contradictory.

So far as I can ascertain they here carefully throw away and avoid touching all the stone celts they find while clearing their lands, considering them the uncanny relics of a bygone race, who were not exactly men. I have only procured one small axe, which is neolithic, and is now, I believe, with the Asiatic Society, Bengal, among other things sent them.

I know of no stone weapons or tools in use now, unless as hammers used by blacksmiths near the Hills. In Asam I lately saw a fine stone hammer used by an old Khampiti. The handle was made of a creeper, and lashed on.

DISCUSSION.

Major GODWIN-AUSTEN said Mr. Peale's paper is of great interest, for the more information we can collect of these little known tribes the better; of those inhabiting the interior of the hills we know absolutely nothing. The Nagas, with whom I am acquainted, lie to the west of those described by Mr. Peale, in the hills between Assam and Manipur, viz., the Auhámi, Tangkùl, and Kutcha Nàgà near Asalù. They are quite distinct from the Kùkis, on the South, who have apparently come up from the line of the Arakan hills and south-west, while the Nagas are from the east-ward. With reference to head taking, I can

* 1 eta, 2 ani, 3 ajum, 4 ali, 5 aga, 6 aruk, 7 anut, 8 achut, 9 akú, 10 abin. Joboka, banjara, muton—numerals only.

testify that it is not always caused by the existence of blood-feuds ; they will take human life whenever a safe opportunity offers, and one of our *dák-men* (letter-carrier) was thus killed, perhaps more for the sake of his musket than aught else. A party lay in wait for him by the way-side and speared him as he passed. With reference to tatooing being a mark of manhood, or the having taken a head, I may mention that the Aughtami Nagas do not tatoo. They have, however, a similar custom ; the wearing of rows of cow-ries on the kilt (drawing shown) is permitted to those men who have killed an enemy, and this is extended to members of a marauding party, when heads are taken. The number of lives thus sacrificed in these hills is very great. In one village of Gaziphimi, we counted no less than fifty-three skulls, stuck up on poles, as shown in the sketch I have brought here to exhibit. I have seen both stone and hard wood inserted into wooden handles and used for weeding by the Kukis in the north Cachar hills. With regard to the ignorance of the Nagas met with by Mr. Peale, and their not being able to count beyond ten—the Aughtami, and those I know, are far in advance of them, and have terms for the numerals up to one hundred, as may be seen in vocabularies of the languages (*vide* the last by Captain Butler, Political Agent, Naja Hills, in “*Journal Asiatic Society*,” Bengal, 1873). Dr. Campbell made some allusion to the Nagas being snake worshippers. I never saw any trace of such worship, nor does it exist. They do not call themselves Naga, which is a term used only by the Assamese for the people inhabiting these hills, and I think the term was quite as likely to be derived from the Hindi “Nanga,” naked. The Nagas are pure demon worshippers, and propitiate them by sacrifice in illness or misfortune.

Colonel A. LANE FOX said that there were points in the paper, and in Major Godwin-Austen’s communication, that were of interest to those who believe that important evidence of connection might be traced by means of the arts and customs of savages. The description of the head-taking amongst these people was so similar to what prevailed amongst the Dyaks, that in listening to the paper, one might almost suppose it was written as an account of the customs of the Dyaks of Borneo. In the use of a tool-weapon they appear also to resemble the Malays. The *parang-illang* and *parang-latok* of Borneo are used for all purposes exactly in the same manner as the *Dao* described in the paper ; and Dr. Campbell would no doubt tell us that this tool-weapon was used much higher towards the north. Then again, the form of the shield affords another point of connection. The form of the shield is very persistent in its distribution ; it is not used in Polynesia as a rule. In Australia, the shield is nothing more than a parrying-shield, with many varieties, having a place for the hand inside. He believed it would not be correct to say that the circular shield was absolutely unknown in the Malay archipelago ; but, as a rule, the shields in all the islands were long and narrow, and had a handle in rear, and were used much in the same manner as the Australian one. In all the islands the shields were varieties, more or less modified, of this long, narrow shield. Major Austen’s drawing shows that this long, narrow

shield, is also used by the people described in the paper. The Rangoes of cane shown on the top of the shield, and used in a *chevaux de frise* when stuck in the ground, are also traceable to the Malay Archipelago. Similar defences, are used in China; but they belong especially to this quarter of the globe; they are used also in Fiji. The tracing of such resemblances as these is of interest when taken at its proper value, not as implying necessarily common racial origin for people amongst whom such customs prevail, but denoting that a like phase of culture has spread over a given area. The Malay peninsula has, no doubt, served as a high road of communication throughout all time between the continent of Asia and the islands, and many other resemblances may be traced by means of it.

Mr. HYDE CLARKE remarked that the Naga languages were well deserving of study. They present the characteristics of the earliest pre-historic periods. Thus, for instance, Night, Black, and Not are all represented by Nak. There is one peculiarity interesting to the student of pre-historic weapons, that the name for arrow is takaba; in Khari Naga, and in the Houssa of West Africa, kebia; but knife and sword are takobi. A village is Arame in Angami Naga, and forest in Fantee of West Africa is Abarama. In the pre-historic epoch, the words for house, and tree, and village, and forest, are often synonyms.

Dr. A. CAMPBELL also offered a few observations.

The STONE MONUMENTS of the KHASI HILLS. By C. B. CLARKE.
[Communicated by Professor H. Fawcett, through Sir John Lubbock, Bart].*

THE Khasi Hills form a plateau, at a mean elevation of 4,500 feet above the sea, between the plain of Assam on the north and the plain of Sylhet on the south. They are inhabited by the Khasi tribe, a people very distinct from the Hindoos north and south of them, and who are a branch of a race which extends eastward as far as South China. Immediately east of them are the Jaintea people, also called Sintengs, who are very closely allied in race and customs to the Khasi tribe. The Jaintea country is physically a portion of the same plateau as the Khasi, and is only arbitrarily divided from it, and exhibits the same grassy hill-tops. The Khasi and Jaintea tribes together occupy the political district administered by the Deputy-Commissioner of Shillong, and the whole plateau is accordingly called the Shillong Plateau by Mr. Medlicott, the Dep.-Superintendent of the Geological Survey in India. Shillong is the English station which is the political capital. The plateau is remarkable for its freedom from the dense jungle which covers the neighbouring Himalayas at similar elevations; it is a fine rocky moor-like plateau, with isolated

* The woodcuts illustrating this paper have been kindly lent by Mr. Murray.

patches of open forest, and with scattered fir trees and oaks. Though south of the Himalaya range the character of the country is more like that found in the Himalayas at 4,000 feet higher elevation, and many plants, never collected in the Himalayas below 9,000 feet above sea-level, are found in the Khasi Hills between 4,500—6,000 feet. In this marvellous plateau the sub-alpine and the sub-tropical forms overlap; at the very foot of elegant palms may be gathered the identical stag's horn moss, which, in Britain, is found only on mountains. On a fir tree much resembling a scraggy Scotch-fir is seen growing the *Vanda cœrulea*, the king of epiphytic orchids; a gnarled oak will carry a gigantic tropical liane; the painted lady and many other British species of lepidoptera will be accompanied by gorgeous tropical papilios and by window moths eleven inches across the wing; the cuckoo and Himalayan pheasant are above, while the tiger, the wild elephant and the green python are below. Justly has Dr. Hooker observed, "I know no spot in the world more calculated to fascinate the naturalist who, while appreciating the elements of which a landscape is composed, is also keenly alive to the beauty and grandeur of tropical scenery."

2. Almost throughout Khasi-land, and in a less degree through the Jaintea country, monumental stones are common. They are numerous in villages in the valleys, but are specially prominent, and sometimes of gigantic size, scattered over the rounded hill-tops where they form a feature in the landscape. In all modern treatises of Archæology and Anthropology the study of monumental stones forms an important chapter. Monuments of a remarkable similarity in design are found alike in Europe, Asia, and isolated islands in the Pacific Ocean, and these are in general of such extreme antiquity that they are treated as belonging to the prehistoric age. The Khasi stone monuments have attracted already much attention; first because of their great number and size; and, secondly and chiefly, because on these hills the erection of these monuments is now in full practice. It is reasonably supposed that a careful study of the Khasi method of raising the stones, and of the traditions or customs in accordance with which they raise them, may throw some light upon more ancient monuments of the same kind, even upon Stonehenge. It has been proposed to send out a commission from England to survey these Khasi stone monuments. They are described by Dr. Hooker, in his work (*Min. Journ.* II. 276), also by Colonel Raban in the *Calcutta Review*, and some account has been lately given by Major Godwin-Austen in the "*Journal of the Anthropological Institute*," No. 2, Oct. 1871. The present memoir was written

years ago, previous to some of these published accounts, but contains several details not given by any of them.

3. The Khasi stones are of three classes, viz :—

- a. The funeral pyres.
- b. The kists containing the pots of ashes.
- c. The monumental groups.

It is the last class (c.) which has, hitherto, nearly monopolised attention, and to which the published notices almost exclusively refer.

4. THE FUNERAL PYRES.—When a rich man dies his body is generally reduced to ashes immediately, but his honorific cremation does not take place till some time, often a year, afterwards. In the interim the earthen jar containing his ashes is kept “under a stone” (in Khasi talk) *i.e.*, in a small temporary closed kist. For the honorific burning a pyre is prepared on which the ashes are burnt over again a very little, *pro formâ*, and the great funeral feast follows.

The pyre is placed just outside the village of the deceased, on a hillock or in a clear space and near the road. The modern pyres are usually square (approximately), the sides of stone (dressed or undressed according to the means of the family) about four or five feet high, the whole of the middle filled with loose stones and earth up to the level of the walls.*

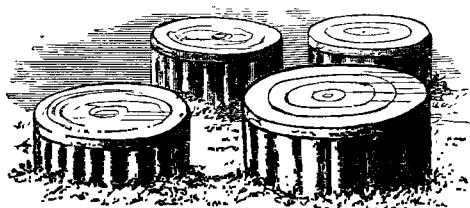
A pyre was raised about four years ago just outside the village of Mausmai close by the English main road. Many hundreds of men and women carrying from $\frac{1}{2}$ cwt. to $1\frac{1}{2}$ cwt. on their backs pass close by this pyre daily and a considerable per centage rest a few minutes on it. Ledges are raised on two sides, but are by no means essential to a pyre; they merely add a utility. The Khasis mean the ledges to be a convenient height to rest on with a load, and each ledge satisfies this condition, but no Khasi would dream of measuring with a two-foot rule, so as to get them the same height. So the pyre itself is meant to be a square or thereabouts. All the Khasi stonework is done in this way; they do not care to make it geometrically accurate, and consequently in my opinion little valuable result could be drawn from any accurate measurement and mapping of the stone monuments.

This pyre at the entrance to Mausmai is one of the most complete modern pyres. The ancient pyres were very seldom (if ever) made with hewn stones, and the Khasis state that in former times they were as often made round (*i. e.* oval) as square. Being thus originally very roughly shapen heaps of loose

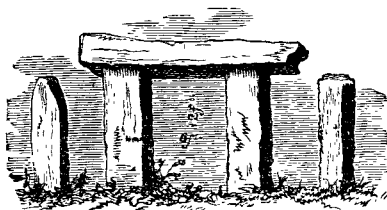
* For admirable illustrations of the Khasi monuments, see “Proceedings of the Soc. Ant., Scotland,” vol. i, p. 91. Fergusson’s “Rude Stone Monuments,” chap. xiii, and “Asiatic Researches,” vol. xvii, p. 506. [Ed]

unhewn stones, and, being used on only one occasion, they rapidly fell into complete decay. Dr. Hooker mentions that he repeatedly remarked cones of earth, clay, and pebbles, about twelve feet high, upon the hills, which appeared to be artificial. These must have been the broken down pyres.

5. THE KISTS CONTAINING THE POTS OF ASHES.—These consist of a circle or square of upright stones, fitting as closely as a Khasi can conveniently make them to do, with one round or square flat stone on the top. They vary in size from a few inches diameter to six or seven feet.



The circular kists are more especially used by the people of the valleys, *i. e.*, who inhabit villages at less than 3,000 feet above the sea; at Walong and Sabhar, which stand west and east of the main Government road as it steeply ascends from Sylhet, there are hundreds (I am not sure that there are not thousands) of kists of this type inside the village. The Khasis of the grassy plateau, the true Nongphlang (*i. e.*, people of the grass in Khasi language, the genuine representative type of the tribe) very commonly employ square kists.



One great feature of the Khasi sepulture is that the ashes of the families are collected from time to time. At first the ashes of a man are probably kept in a small kist. Then after a few years a great general family ceremony is held, and the ashes of the various individuals of the family are collected from the smaller kists. The ashes of all the men are collected into one earthen jar, the ashes of all the women are collected into another, and these two jars are placed in one larger kist, the jar

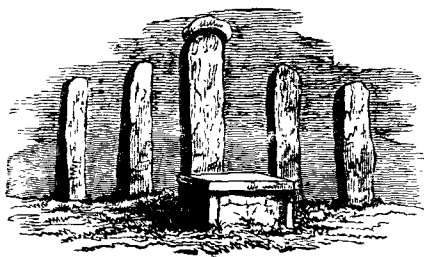
of women's ashes next the door, *i. e.*, the last stone closed; the reason of which is that in Khasi-land the woman is always mistress of the house. The quantity of ashes altogether is very small.

Each occasion of collection of family ashes is accompanied by a grand family feast, which is mainly of pig. No bones of pig could by any chance get inside the kist; that would be horror.

The stones forming the kist fit as closely as a Khasi can conveniently make them; a mouse might, however, generally get in. In the neck of each earthen jar of ashes a close-fitting stone is placed so that no animal could get at the ashes within; but this, of course, does not fit by any means air-tight, and the damp of the climate affects the ashes so much that on re-opening the kists after even a few years, for the purpose of agglomerating the family ashes, it frequently happens that no trace of ashes is found in the earthen jars.

In the descriptions of the Khasi stone monuments hitherto published, these numerous kists appear often overlooked or confounded with the horizontal monumental slab. The kists differ entirely in their object and meaning, and in being closed. So long as they contain earthen jars they cannot be mistaken; but by the continual collection of family ashes the majority of the square kists are left with one side broken down and empty, and in such a state it is sometimes impossible to determine whether the horizontal slab be a monument or the lid of an old kist, unless a family can be found to claim it as their monument. Where there are no upright monumental stones near I incline to suppose that a large majority of these doubtful remains are kists and not monuments.

6. THE MONUMENTAL GROUPS.—There are two general types of monumental stones, *viz.*, the upright slab and the horizontal slab.



The upright slabs are commonly grouped in threes or fives (sometimes they are seven or more); they are nearly always oblong and set up in a row with the tallest stone in the

middle; annexed is a representation of a common type containing five stones.

A common height for the middle stone of such a monument will be six to ten feet, by 2-3 feet wide. The stones are sunk not very deep, say 1-2 feet, into the earth; great numbers of fallen stones are seen. Monuments of this character are often placed on the crest of the hills, and in many parts of Khasi-land the landscape appears dotted over with them.

The horizontal slabs are commonly grouped in pairs. The flat slabs may be 5-10 feet long, and are rarely so exactly quadrangular, and they generally have some of the corners irregularly rounded off, and thus pass into the oval or round horizontal slab, which is also a frequent type.

The upright and horizontal slabs are often combined to form a single monument, and perhaps the commonest of all the combinations is that in which five upright slabs have two horizontal before them. The combinations adopted are, however, endless in variety. In these combinations it must be understood that the whole group of stones forms one indivisible monument, which may be the monument of one individual, a household, or a family. Families retain a history of the monuments which belong to the family, and thus in a small degree of the names of their ancestors. Such family monuments may be repaired, added to, or rebuilt from time to time. They are not necessarily placed where the family ashes are kept in kists, or near such kists; but they are usually at no great distance from the village where the family dwells.

The putting up a large stone, say one that stands fifteen feet out of the ground, is a very costly matter, and the monuments of the first class in size in the Khasi country are not very numerous; in the monuments of small stones, the number of stones is often great, I have noticed twenty-one stones in a row, no stone exceeding two feet high.

The upright slabs are (particularly when unaccompanied by any horizontal slabs) usually placed in a straight line. But frequently, where the horizontal slab is round, the upright slabs stand in the arc of a circle, and sometimes the upright slabs are placed in a curved line apparently by accident, or because the nature of the steep ground suggested such an arrangement. Two such monuments occur on the main road to Lailankote.

Major Godwin-Austen states in his article on the subject that the upright slabs *always* stand in threes, fives, sevens, etc. This is a mistake; to have the number of stones unequal, with the central slab the tallest, is perhaps the plan adopted in forty-nine monuments out of fifty; but among the vast variety of monuments

in these hills a dozen monuments on the binary type may soon be found in which there are two equal upright slabs in the middle, and the other stones placed symmetrically on each side of them.

7. There are three kinds of rock employed by the Khasis for stone monuments, viz. :—

- a.* The Cherra sandstones.
- b.* The Shillong sandstones.
- c.* The granite.

Small stones are conveyed considerable distances from the place of manufacture before they are set up—large stones are not—hence the material of the monuments is determined everywhere geologically.

a. The Cherra sandstones are tertiary and cretaceous rocks spread along the southern edge of the plateau and producing the ledges which mark its abrupt termination. In the great thickness of these sandstones are many beds in which the rock occurs in large sheets with very few joints, and well-adapted for working out large slabs therefrom. The sandstone is generally very hard, but not so hard but that the Khasis can work it with their own native-made iron tools.

There is a quarry, now in full work, about half-a-mile out of the old Cherra cantonment, upon the Mamloo path, where slabs may be seen in preparation. The slabs made from the Cherra sandstones, admitting of being worked, are generally hewn pretty fairly to a shape and smoothed before being set up. The ancient monuments are, however, often made of very rough slabs.

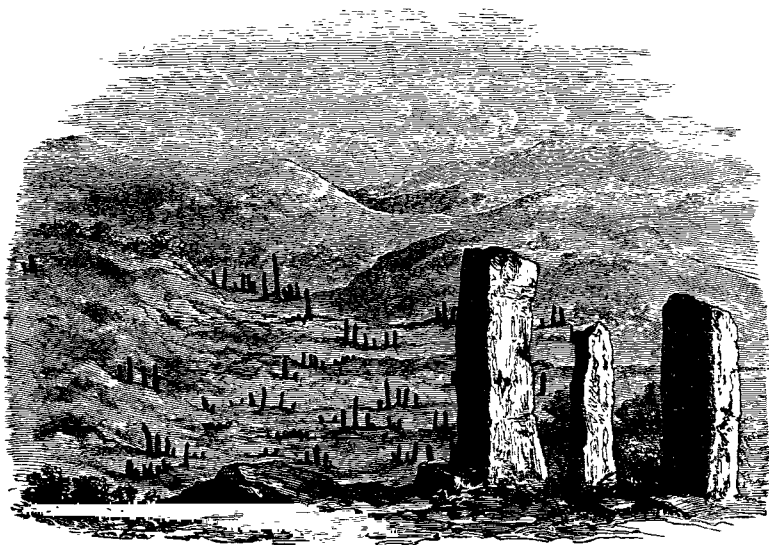
All the well-known monuments near the old Cherra station are made of these sandstones, as also the large monuments at Mamloo, Mausmai, and Lirinow. These three monuments all stand on sheets of Cherra sandstone and the stones were cut out of the rock hard by where they now stand. The stones quarried now outside the Cherra cantonment, being for transport, are none of great size.

The Khasis also work gigantic slabs of stone for bridges. Where the span is anything under twenty feet a single slab four or five feet wide and two feet thick is thrown across; piers of enormous blocks of sandstone are raised on each side, on which the slab may rest, if there is the remotest fear that the water can, in any flood, reach the under surface of the slab. As compared with such a bridge the Khasis regard the best efforts of the English engineers as mere makeshifts. The arch at Amwee figured by Dr. Hooker is Bengali work.

b. The Shillong sandstones extend over a large area of the northern portion of the plateau: they are often more argillaceous

(sometimes slaty) than the Cherra sandstones, and are geologically ancient, probably being of palæozoic age, but containing no fossils. They are generally inclined at high angles and the beds are full of joints, and do not admit of large slabs being got out of them. I know of no monument of the first class made out of Shillong rocks, but slabs of six feet high are very common. They are generally obtained by splitting out with wooden wedges and are not often finished with iron tools. The monuments on the Shillong sandstone area are therefore of a much rougher character than the Cherra monuments, the stones irregular in shape, and the stones that should correspond in size only corresponding very roughly. It is often very difficult to say whether these monuments are of the regular 3-5-7 stoned type or not, but they all are designed in general accord with the two great types of upright and horizontal slabs.

c. A large area, perhaps 1,000 square miles, of the Shillong plateau, is covered with scattered blocks of granite, varying in size up to masses as large as cottages: perhaps the Kollong rock itself (figured by Hooker) might be counted as the extreme size



such blocks here reach. This granite area runs east and west through the centre (or somewhat through the northern half) of the plateau. It is of great width and continuity westward, becomes broken into isolated areas in the centre of the hills, and becomes very narrow in the Jaintea territory, finally dying out

in East Jaintea, according to the Khasis, who are good geologists.

These granite blocks are found on the steep hill sides and on the hill tops, the valleys between being often entirely destitute of them. The highest hills of the plateau are especially favoured with them as Nonglas (Nunklow) and Laitlankote. On the edges of the granite area and on the isolated peaks of the country, outlying heaps of granite blocks are found. Around Jowye (the Jaintea capital), the country is very uniformly at a level of about 4000-4500 feet above the sea, and not a granite block is to be seen there, nor in marching east thence, where you keep at the same level, until you reach the Rallieng hill about twelve miles east of Jowye, where the blocks appear again in full force all over the summit of the hill.

From these granite blocks, slabs of almost any size might be obtained, but the Khasi native iron tools will not work this granite, which is very hard, and the granite slabs used in the Khasi monuments are merely flakes obtained by heating the block with fire along a line and then pouring cold water upon it. The upright granite slabs thus frequently exhibit one convex and one concave face, as also do the horizontal slabs which are round or oval, not quadrangular. The flakes are entirely unworked in the Khasi territory, so that the granite monuments have an extreme rudeness and ruggedness about them which has been commonly supposed to indicate extreme antiquity. This I believe is altogether a mistake, but at the present time the taste of the people appears educated up to a preference for worked stones, and I have not seen any granite monument in process of construction, though I am told that many have been made within the memory of man.

There is an important difference in the Jaintea granitic monuments which are neatly worked to the approved form. The Bengali Rajahs of the plains, Jaintea and Jaintepore, have long established an influence in the hills, and Bengali workmen have thus penetrated the hills from Jaintepore by Amwee up to Jowye, the hill capital, and further. The Bengali tools are able to fashion this hard granite, and the gigantic slabs, whether used for monuments or for bridges, are commonly found neatly hewn, all the way from Jaintepore up to Nartiang, north of Jowye.

Large granite stones are rather more difficult to move than sandstones of the same dimensions, and the first class granite monuments are found on the spot where the granite blocks abound. Where an isolated hill was covered with large blocks, and no blocks were seen anywhere else near, this seems at once to have suggested such a hill as a suitable spot for monumental erections. In just the same way at Stonehenge the large stones

were all found within 200 yards of where they now stand, as may be inferred from the stray stone at about that distance from Stonehenge and not made use of: the small stones were probably brought a considerable distance from the greensand area in the north of the county.

8. In the setting up of these monuments the Khasis at the present day use only the simplest and most direct mechanical means. For transporting a big stone wooden rollers are placed beneath it and the stone is then drawn by a large number of men harnessed to it by rattan ropes. To set one of the slabs upright, one end is slipped into a hole dug 1-3 feet in the ground, while the other end is tugged by similar ropes. For putting one stone upon another, as in a horizontal slab monument, it is drawn up a sloping stage of bamboo, but if the slab be of great weight, a slope of earth must be constructed, up which it may be pulled. These are the present Khasi methods, and it is, of course, highly probable that similar resources were employed in ancient times. I add a more particular account of some of the larger monuments.

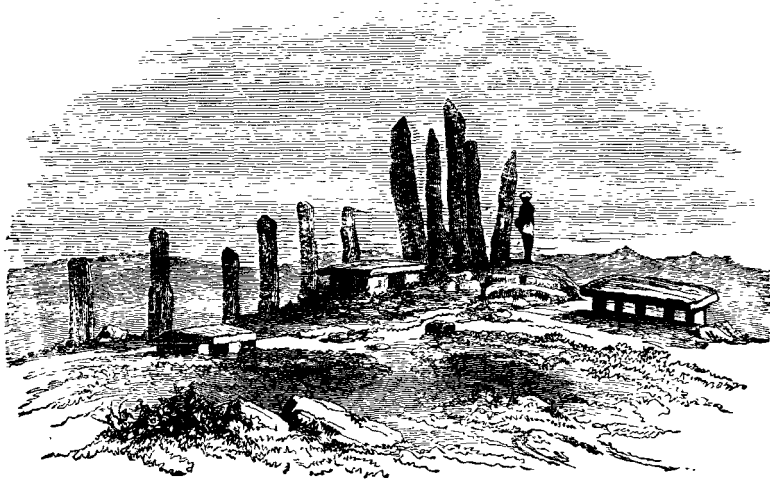
9. The monument on the Government main road, about six miles north of Cherra, not far from the village of Lirinow, stands on sheets of Cherra sandstone, out of which the slabs were cut. The tallest stones were about fifteen feet out of the ground. The five stones on the left-hand side (west) of the road were erected when I first visited the hills. The five stones on the right-hand side were erected about four years ago, the family to whom the monument belongs having determined on such an addition. The two portions form one indivisible monument, and exactly correspond, the stones being accurately worked and rounded. The two top-knots are seen in several other monuments, but must, I think, be held proof always of a very late date for their erection. At the Mausmai monument a large rosette is carved on the face of the middle of the big central upright slab, which is also I presume modern work.

10. The monument at Mamloo village. This is, perhaps, the monument in all the hills which exhibits the largest slabs of Cherra sandstone. It stands on sheets of the same rock and there can be little doubt that the slabs were cut on the spot. It is of the (less usual) binary type.

11. The monuments at Rambrai in the west of Khasi-land. These consist of numerous horizontal and vertical slabs of no great size, the upright slabs being 4-8 feet out of the ground, but remarkable for their arrangement on a long open slope outside the village. The monuments stand all close together, collected as in a churchyard, so that it is not easy to separate

out each monument. The upright slabs are placed mainly in ranks, the plane of each slab being parallel to a horizontal line of the sloping ground. The effect of the whole, at a little distance, is exactly that of a ruinous English church-yard. The upright and the flat slabs so exactly correspond to the two types of tombstone which were in almost universal use in England before the rise of modern ritualism, that the correspondence can hardly escape notice. It is improbable that this correspondence can be wholly accidental.

12. The monuments at Laitlankote. These are chiefly made out of a heap of granite blocks which occupy the level top of a small hill, and among them are the largest stones in the Khasai country. Some of the upright slabs are as much as 18 feet out of the ground, and the largest horizontal slab is stated by Colonel Raban, in his account, to be an irregular ellipse; major axis, 32 feet; minor axis, 15 feet; thickness, about 2 feet. It is one block of granite, and, like all the other stones here, is unhewn.



These Laitlankote monuments are collected on the level top of this hill, and (partly, perhaps, from the nature of the ground) they affect, more or less, a circular arrangement—the upright slabs being placed irregularly in arcs of circles on one side of the oval horizontal slabs. The slabs being of unhewn granite are necessarily oval and not quadrangular; but it should be remarked that, in marching from Cherra to Laitlankote, the monuments will be seen to pass quite gradually from the plane to the circular type.

At Laitlankote, the largest horizontal slab is granite: of the

others, some are granite, some Shillong sandstone. Of the large upright slabs round the largest horizontal slab, half are granite, half (placed without method) are Shillong sandstone. And so with the other monuments on this hill. There is no general plan or system (so far as I can trace) in the arrangement of these monuments, as a whole.

It has been inferred from the gigantic size, circular arrangement, and rude workmanship of these Laitlankote monuments, that they are of extreme antiquity, probably the oldest in the hills. I see no sufficient grounds for such an assumption. The workmanship is no rougher than in other Khasi monuments made of granite and Shillong sandstone: the quasi-circular arrangement may be seen in hundreds of monuments: and as to the size of the stones, that proves to me, chiefly, that the Laitlankote monuments were erected when Laitlankote was a dominant and prosperous village. I do not say that the Laitlankote monuments may not be very old, but I should not be the least surprised if positive proof turned up that they had been erected within the last century.

13. The monuments at Nurtiung, figured by Dr. Hooker, and called by him, the "Nurtiung Stonehenge." Nurtiung is in the Jaintea territory, about ten miles east of the Khasi boundary. Dr. Hooker's picture is on a small scale, and gives little idea of the great extent of the Nurtiung monuments, which stand also more closely packed than I should have supposed from the picture.

This Nurtiung Stonehenge contains the largest stones of any monuments in the Shillong plateau; they are also remarkable for being of hewn granite, and further, they are not scattered about the hill tops, but placed within the sacred grove of the village, in a valley near a lake, so that they stand, mingled with large trees, in a manner which I have seen nowhere else in Khasiland.

One of the worked granite blocks is 27 feet high out of the ground, about 6 feet broad at the base, and $2\frac{1}{2}$ feet thick, and is neatly shaped and dressed. This, I suppose to be the work of Bengali artizans, or of their Jaintea apprentices, possibly. There are other very large worked granite slabs; one now used as a bridge, but, perhaps, originally intended for a monument. The area at Nurtiung, thickly covered with monuments, is not less than an acre, and there are more scattered monuments around. The exciting cause for this Stonehenge is, that at Nurtiung there occurs an outlying cluster of granite blocks. None of the large stones at Nurtiung appear to have been moved many feet. The numerous monuments are all reducible to the two types of upright and horizontal slabs, as indicated in the picture of Dr. Hooker.

Until the English period, say up to 1828, it does not appear that the Hindoos penetrated much into the Khasi hills; but they did into the Jaintea hills, and I imagine that either themselves or their handicrafts reached as far as Nurtiung. There is a typical large monument of upright slabs at Jaintiapore, the capital of the Jaintea plains.

14. The notes for the above account of the stone monuments of the Khasi hills were placed in the hands of Colonel McCulloch (late Governor-General's agent at Muneypoor), and I have availed myself of many suggestions which he has kindly given me in the present paper.

DISCUSSION.

Major GODWIN-AUSTEN said, one of the most interesting points of Mr. Clarke's paper is the notice of the separation of the ashes of the men and women of a family, at certain intervals, into separate earthen pots. I may mention that the shape of the cysts is never the same in any one part of the Khasi hills; sometimes they are oblong and above ground, and sometimes they stand on a raised platform. On opening one, in a part of the country long since deserted, I found entire bones, calcined, and ornaments; these are now always taken off the body before cremation, but, evidently, in former times, were burnt with the dead. The distance the Khasis sometimes carry the monumental stones is considerable. I know of blocks of granite that have been taken into the sandstone area nearly four miles. The custom of setting up these stones is fast dying out, and some villages have given it up altogether. It is impossible to say what age some of the monoliths may be; all history of most of them is gone, and the present generation can give no account of them. The custom is one of great antiquity, I think, and there is no reason why some of the stones, now standing, may not be many hundred years old.

Mr. A. L. LEWIS said, if he, as a visitor, might be allowed to make a few remarks, he would suggest that there was no reason whatever for connecting the monuments of the Khasis with those of Britain. Mr. Clarke had spoken of stones lying round Stonehenge as showing that the stones composing it had been gathered close at hand; but this was not so, as they had been brought from a distance of some miles, and there were no loose stones lying round Stonehenge, except those which had been placed there by design. That design was found running through all the British circles that he had seen; but it was certainly not found in the Khasi monuments. It was, however, found in the circles in southern India, figured by Colonel Forbes Leslie, which differed, therefore, from the Khasi monuments, and resembled those of Britain. He had pointed this out before the British Association as long ago as 1869, in a paper which would be found printed in full in the *Journal of Anthropology*, 1870, p. 286, and also in subsequent papers read before the Anthropological Society and Institute, and published in the proceedings.

The President read the following paper:

DESCRIPTION of a SAMOIEDE SKULL in the MUSEUM of the ROYAL COLLEGE of SURGEONS. By GEO. BUSK, F.R.S., Pres. Anth. Inst. [With plate xxvi.]

As I am not aware that any example of a Samoiede skull exists in this country, or that any description of the cranial character of the people has been published, the opportunity of exhibiting one before the Anthropological Institute and of placing a description of it on record, has appeared to me one that should not be neglected.

Of the authenticity of the skull there can be no question. It was, together with the entire skeleton, and the skulls and skeletons of the Wolf, Northern Lynx, &c., purchased a short time since by the Royal College of Surgeons from Mr. J. R. Alston, to whom they had been consigned by a Russian correspondent in the neighbourhood of Archangel, who had himself, as it would seem, with much difficulty and at some risk, disinterred the bones.

The individual to whom they belonged was aged, but otherwise the remains afford probably a very fair example of the cranial and osteological character of his race.

As the bones require maceration before they can be well described, and as they do not appear to present any remarkable characters, I do not intend, on the present occasion, to refer to any other part than the skull.

The skull, to judge from the teeth, many of which were shed long before death, and of which those that remain are much worn, is that of an aged individual. It is of a strongly brachycephalic type (863), and at the same time much depressed, or, as I have elsewhere* termed such low crania, highly tapinocephalic, the altitudinal index being not more than 776.

The skull is remarkably thin. The sutures all open and very finely serrate. The frontal sinuses well-defined and prominent. The muscular impressions generally faintly marked, except the mastoid processes, which are well but not strongly developed. The zygomata slender, but the malar bone projects considerably backwards.

1. *Norma lateralis*—(Pl. xxvi, fig. 1).

In this view the forehead appears low and much reclined, whilst the occipital outline above the tuberosity is nearly vertical, but without any appearance of artificial flattening. The temporal lines, except for about two inches behind the external

* *Platycnemic Man in Denbighshire*, "Journal of the Ethnological Society," vol. ii, New Series, p. 440.

orbital process are quite indistinct. The squamosal region is remarkably convex, the greatest convexity being a little behind the vertical line or immediately above the mastoid processes.

2. *Norma occipitalis*—(fig. 2).

The outline in this view of the cranium is, on the whole, rounded, sloping downwards from the summit in somewhat of a pyramidal form to the parietal tuberosities, whence it becomes more expanded, following the bulging in the squamosal region above noticed. The parietal foramina are very minute but distinct. The occipital tuberosity is well marked, but not strongly developed, and below it the subnial portion of the occipital is nearly horizontal.

3. *Norma facialis*—(fig. 3).

This presents, as before-mentioned, considerable and well-defined prominences of the frontal sinuses. The supra orbital border is acute but rather prominent, and exhibits a wide and shallow frontal notch. The orbits are quadrangular and nearly equilateral, being about 1.4 by 1.55 in vertical and horizontal diameters. The canine fossæ, as is usual in aged skulls, are hollow, the alveolar border rather projecting, but not so much so as to allow of the face being termed truly prognathous, the slight prognathism being at any rate wholly maxillary. The nasals are prominent, forming a sharp elevated ridge, with an aquiline curve.

4. *Norma verticalis*—(fig. 4).

The outline is very rounded, rather narrow in the frontal region, in consequence of which the skull is slightly phenogygous. The projection of the nasals is well seen, as is also that of the frontal sinuses, owing to the depression of the frontal region.

5. *Norma basalis*.

From the fact that a considerable quantity of the dried soft parts covers the greater part of the base, I have not been able to give any figure of this view. In it, however, the alveolar border is seen to be rather narrow, the palate deep, and the palatal processes of the palatals unusually narrow. The *foramen magnum* which is nearly central, is oval, 1.5 and 1.25 in its anterior and transverse diameters, and it lies in a nearly horizontal plane. The dimensions of the skull are as under :

Comparative dimensions, proportions, etc., of the Samoide and other Brachycephalic Skulls.

RACE.	1. General.			2. Breadth.					3. Radii.					4.	5. Longitudinal arcs.				6. Transverse arcs.				7. Indices.			8. Contents.		
	Length	Breadth	Height	Post-orbital*	Post frontal*	Parietal	Occipital	Zygomatic	Frontal	Vertical	Parietal	Occipital	Maxillary	Fronto-nasal	Circumference	Frontal	Parietal	Occipital	Total	Frontal	Vertical	Parietal	Occipital	Latitudinal	Altitudinal	Gnathic*	Capacity (c. i.)	Brain weight (oz av.)
Samoiede (1)	6.95	6.	5.4	3.8	5.	5.6	4.5	5.8	4.4	4.5	4.6	3.8	3.9	3.6	20.7	4.9	4.7	4.4	14.0	12.2	12.9	13.2	11.8	.863	.776	.3	93.5	.56
Mongol (8)...	6.96	5.87	5.59	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.843	.803	.22	...	...
Malay (6) ...	6.85	5.57	5.85	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.831	.850	.36	...	...
Rhodie(V.B.)	6.6	6.0	5.5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.905	.822	?	...	...

* By "post orbital breadth or diameter," I mean the "least frontal," and by "post frontal," that diameter which I have hitherto termed "vertical," because it was taken at the vertical line. The "gnathic index" is represented by the difference between the maxillary and fronto-nasal radii, which, as I have formerly remarked, may be taken as a rough indication of the degree of prognathism, if any exist.

Fig 1

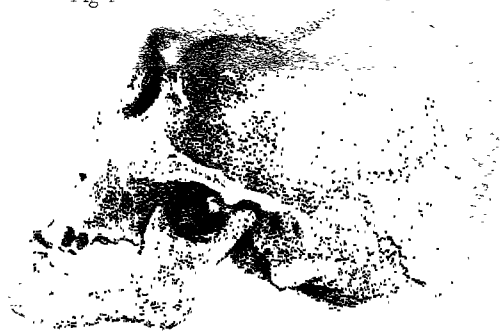


Fig 2



Fig 3

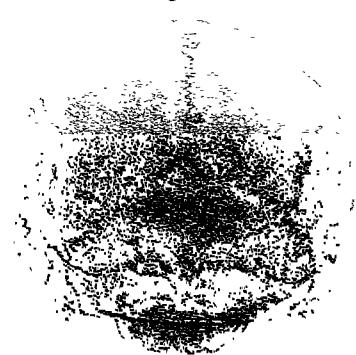
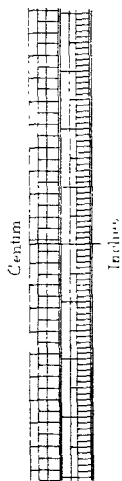


Fig 4



In the same table I have also placed the mean dimensions, &c., of eight Mongol skulls, (Chinese and Tartars,) and of six Malays, including two Karen, two Burmese, and two from Singapore, in order to show how closely in most respects the Samoiede skull corresponds with them in general type. The main difference, which may, of course, be individual, appears to consist in its lower altitudinal index. Although, however, this may be individual, it is worthy of notice that in this respect of altitude the Mongol skulls are intermediate between the Samoiede and the Malay.

I would also, in conclusion, advert to the strong general resemblance, as regards dimensions and proportions, between these Asiatic Brachycephali and the Rhœtic skulls from the Grison Alps, described by Von Baer, of five of which I have subjoined the mean dimensions.

MR. WILLIAM MARSHALL gave an account of the discovery of skulls in the peat of the Isle of Ely. The following approximate measurements were furnished by Prof. Marshall, F.R.S.

N.B. The capitals refer to Dr. J. B. Davis's Nos.

A. Capacity (?) skull too broken to be measured.			Anglo Saxon in Davis's collection.	
B. Circumference	19.25	.	.	(female) 19.7
C. Fronto-occipital arch	15.	.	.	14.2
Frontal	5.	.	.	4.8
Parietal	5.25	.	.	4.7
Occipital	4.75	.	.	4.7
D. Intermastoid arch	15.5	.	.	14.6
E. Length	6.75	.	.	6.8
F. Breadth (<i>i. p.</i>)	5.5	.	.	(<i>i. p.</i>) 5.5
Frontal	4.75	.	.	4.6
Parietal	5.5	.	.	5.2
Occipital	4.5	.	.	4.4
G. Height : For. magn. to vertex	4.5	.	.	4.8 ?
Radius—Frontal	4.25	.	.	4.7
Parietal	4.25	.	.	4.8
Occipital	3.35	.	.	4.3
J. Length and breadth	100 to 81.4	.	.	81.
K. Length and height	100 to 66.6	.	.	?

Not measured with a craniometer.

DISCUSSION.

Professor MARSHALL said that, not having sufficient experience as to the nicer national peculiarities of skulls, he did not attend the meeting

for the purpose of expressing any opinion as to the racial character of the skull now exhibited by Mr. W. Marshall. He could, however, so far point out its chief individual characteristics, as to enable him to appeal to those having more ethnological knowledge than himself for their opinions on the subject. The skull in question, of which a part of the base and upper jaw was wanting, but of which the lower jaw was perfect, appears to be that of a male, of moderate stature and just beyond middle age, and was evidently partially deformed from softening and pressure. The proofs of this deformation were a decided want of lateral symmetry in the two parietal regions, and an imperfect fitting or coaptation of the frontal with the parietal bones along the coronal suture. The various eminences of the skull were only moderately prominent; but the general form of the cranium was good. The frontal bone was very thick, smooth, solid, and heavy; the other parts of the cranium present were less dense, as if they had been more acted on by the fluids of the bog earth in which it had been found. The lower jaw was particularly solid, and the dentine of the teeth, as usual, was stained of a deep brown, or blackish brown colour, also the effect of the bog; whilst the enamel was brilliantly white. The teeth were small, the molars being moderately worn. The external auditory meatuses were small. The skull was apparently of less than the ordinary capacity of existing adult males; but as the base was gone that could not be tested. The adjoined measurements show, amongst other points, that the skull was decidedly, though not extraordinarily, brachycephalic, a conclusion, indeed, easily arrived at by simple inspection only. The measurements, if compared with those given in Dr. Barnard Davis's "*Thesaurus Craniorum*" coincide rather with those of the Anglo-Saxon than those of the British type. The broken calvarium of another skull found with this one, and also exhibited by Mr. W. Marshall, was, however, evidently dolichocephalic, smoother on the surface, and unusually thin all over; and these facts showed what was well known, the occurrence at all known periods, of different forms of crania amongst the same race or stock; and, therefore, the impossibility of trusting to brachycephaly, or dolichocephaly, alone, in determining the belongings of any given cranium. Professor Marshall concluded by handing in the above table of measurements of the more perfect skull.

The PRESIDENT remarked that the skulls exhibited by Mr. Marshall presented the form termed, by Professor Huxley, the "*River-bed type*," and by himself, the "*Mews-lade type*." And that, from the appearance, more particularly obvious in one of them, of their having lain embedded to a certain depth in a clayey, or, may be, sandy bottom, as well as from their colour and the absence of any alteration in the consistence of the bone, he should imagine they must have lain at the bottom, or below the peat and not exactly in it. It was probable, therefore, that the individuals perished, perhaps by drowning, when the site of the peat was still submerged.

The President announced that the auditors of the accounts for 1873 had been appointed, viz.:

On behalf of the Council, Mr. F. G. H. Price;
On behalf of the Members, Major S. R. I. Owen.

The meeting then separated.

ANNUAL GENERAL MEETING.

JANUARY 27TH, 1874.

Professor BUSK, F.R.S., *President, in the Chair.*

The minutes of the last Annual Meeting were read and confirmed.

The President appointed as Scrutineers of the Ballot, Mr. R. B. Holt and Dr. J. Campbell, R.N., and declared the Ballot to be then opened.

The Treasurer submitted the Financial Statement, as follows : (see next page).

Mr. EVANS moved the adoption of the Balance Sheet, which, notwithstanding the uncalled for secession of members, and the numerous losses by death, showed that the Institute was in a satisfactory condition as regarded members, and that its income sufficed to meet its current expenditure. It was, however, to be borne in mind that the Institute, at the time of its formation, had taken over the by no means inconsiderable amount of debts owing by the two societies which were amalgamated in it; and though the amount of this debt had been materially reduced since that time, but little if any reduction had been effected during the past year. He hoped that the President in the course of his address might lay before the Institute some plan of getting rid of this incubus, and trusted that the members would cordially co-operate in effecting so desirable an object.

Mr. F. G. H. Price seconded the adoption of the Report, and the motion was carried.

The Director read the Report of Council for 1873.

REPORT of the COUNCIL of the ANTHROPOLOGICAL INSTITUTE OF
GREAT BRITAIN AND IRELAND for 1873.

THE Institute has held fifteen ordinary meetings during the year, at which the following communications were made :

On the Atlantean Race of Western Europe. By the late J. W. Jackson, Esq.
On the Kojahs of Southern India. By Dr. John Shortt.

ANTHROPOLOGICAL INSTITUTE OF GREAT BRITAIN AND IRELAND.
Statement of Income and Expenditure for the year ending December 31st, 1873.

RECEIPTS.

	£	s.	d.
To Balance, January 1st, 1873:			
In Bank	£153	7	4
In hand	3	16	1
		157	3 5
Annual Subscriptions received:			
Collector	542	0	1
Secretary	97	11	0
Bank	88	2	0
Life Compositions:			
Collector	£42	0	0
Secretary	21	0	0
	63	0	0
		790	13 1
Sales of Books:			
Longmans	20	6	3
"	11	8	6
	31	14	9
Trübner—Journal	45	5	7
Taylor and Francis	10	8	9
Sotheby and Co.	18	12	0
Office Sales	10	17	0
		116	18 1
		£1064	14 7

PAYMENTS.

	£	s.	d.
By Payments on account of Publications:			
Thomas Richards	£300	0	0
Taylor and Francis	52	4	7
Lithography	63	18	0
Rent, Office Expenses, etc.:			
Rent, one year	137	10	0
House Sundries	£40	13	1
" Tea and Coffee	24	11	0
Office Sundries	65	4	1
London Library Subscription	12	6	9
Registration	3	0	0
Salaries and Commissions:			
Secretary	100	0	0
Clerk	57	0	0
Collector	39	5	10
Receipt Stamps	2	14	2
	199	0	0
Postages: General letters, etc.	19	14	0
Journal	19	13	10
Stationery, Meetings, etc.:			
Stationery	5	19	11
Reporting	6	16	6
Advertisements	45	3	0
Books for Library	5	6	6
Balances: in Bank	113	12	5
In hand	10	0	0
	123	12	5
	£1064	14	7

We have examined the above account and find it correct,

SAMUEL R. I. OWEN, Major,
 F. G. H. PRICE.

On the Primordial Inhabitants of Brazil. By M. Henriques Gerber and Captain R. F. Burton.

On the Inhabitants of Car Nicobar. By W. L. Distant, Esq.

On the Native Tribes of Tasmania and the causes which led to their Extirpation. By R. Calder, Esq.

On the Macas Indians. By Sir John Lubbock, Bart., M.P.

On the Relation of the Parish Boundaries in the South East of England to Great Physical Features, particularly to the Chalk Escarpment. By W. Topley, Esq.

On the Looshai Indians. By Dr. A. Campbell.

On Implements and Pottery from Canada. By Sir Duncan Gibb, Bart., M.D.

On Ventnor Flints. By Hodder M. Westropp, Esq.

On the Concurrent Contemporaneous Progress of Renovation and Waste in Animal Frames, and the extent to which such operations are controllable by artificial means. By George Harris, Esq.

On Theories regarding Intellect and Instinct; with an attempt to deduce a satisfactory conclusion therefrom. By George Harris, Esq.

On the collection of Peruvian Skulls lately received from Mr. Consul Hutchinson. By Professor George Busk, F.R.S.

On the same and on further collections, together with Pottery received from Mr. Consul Hutchinson. By Dr. Barnard Davis, F.R.S.

On a Human Skull from Birkdale, Southport. (Communicated by the President.) By T. Mellard Reade, Esq.

On the Religious Beliefs of the Ojibois Indians of Mannitoba and Lake Winnipeg. By Dr. A. P. Reid.

On Rock Inscriptions in Brazil. By J. Whitfield, Esq.

On the Danish Aspect of the local nomenclature of Cleveland. By the Rev. J. C. Atkinson.

Remarks about the consecration of the Serpent as an emblem but not an object of Worship among the intelligent Druids. By James Hutchings, Esq.

On Eastern Coolie Labour. By W. L. Distant, Esq.

On the Westerly Drifting of Nomads. Part X. By H. H. Howorth, Esq.

On the Egyptian Colony and Language in the Caucasus. By Hyde Clarke, Esq.

On a ready method of measuring the cubic capacity of Skulls. By Professor Busk.

On a Mural Inscription in large Samaritan Characters from Gaza. By Rev. Dunbar I. Heath.

Strictures on Darwinism. Part II. The Extinction of Types. By H. H. Howorth, Esq.

On the Ainos. By Lieut. C. S. Holland, R.N.

Account of an Interview with a tribe of Bushmans in South Africa. By G. W. Stow, Esq.

Specimen of Native Australian Languages. By A. Mackenzie, Esq.

A brief account of Three Microcephales. By Dr John Shortt.

On a Patoo-patoo from New Zealand. By Sir Duncan Gibb, Bart., M.D.

The Healing Art in the North of Scotland in the olden time. By the Rev. Walter Gregor.

On a Hypogeum at Valaquie, I. of Uist. By A. Carmichael, Esq.

On Heathen Ceremonies still practised in Livonia. By the Baron de Bogouschefsky.

On the Westerly Drifting of Nomades, from the 15th to the 19th century. Part XI. The Bulgarians. By H. H. Howorth, Esq.

On a method of collecting Anthropological Statistics from Schools, Universities, and other large bodies. By Francis Galton, Esq.

Explorations amongst Ancient Burial Grounds, chiefly on the sea coast valleys of Peru. Part I. By Mr. Consul T. J. Hutchinson.

Report on the Papers read in the Anthropological Department of the British Association at the Bradford meeting. By F. W. Rudler, Esq.

The Siah Posh Kafirs, a hitherto mysterious race, inhabiting Kafiristan on the Hindu Kush, and supposed to be a Macedonian colony. By Dr. G. W. Leitner.

On the Hieroglyphics of Easter Island. By J. Park Harrison, Esq.

On the Exploration of Cave Ha, near Giggleswick, Settle, Yorkshire. By Professor T. McKenny Hughes.

On the occurrence of Flint Implements of the Le Moustier type in Pontnewydd Cave, near St. Asaph. By Professor Hughes and Rev. D. R. Thomas.

On a Fibula of unusual formation, discovered in Victoria Cave, Settle. By Professor George Busk, F.R.S.

Ethnological Data from the Annals of the Elder Han. Part I. Translated by A. Wylie, Esq., of Shanghai; with an introduction by H. H. Howorth, Esq.

On the Westerly Drifting of Nomades, from the 5th to 19th century, Part XII. The Huns. By H. H. Howorth, Esq.

Note on Implements from St. Brieuc. By Mons. V. Hénou.

Twenty-two ordinary members have been elected during the year.

J. H. Lamprey, Esq., has been elected a corresponding member.

The following local secretaries have been appointed since January :—

Samuel E. Peal, Esq., for Assam; Dr. A. P. Reid, for Halifax, Nova Scotia; George Hartley, Esq., H.M. Consul, for Fernando Po; Edwyn C. Reed, Esq., for Santiago de Chile.

Thirty-nine ordinary members, and one honorary member, have withdrawn since the last anniversary.

The Institute has lost, through death, Mr. Cowell Stepney, Mr. A. C. Brebner, Mr. J. W. Flower, Mr. W. Jones, Mr. T. S. Davy, Mr. Camden Hotten, Sir David Salomons, Professor W. N. Chipperfield, Dr. Thurnam, Mr. Oust Atkinson; one honorary member, Professor Agassiz; and one local secretary, Dr. Alexis Fedtschenko, for Moscow.

By deaths and withdrawals, therefore, the number of members of the Institute has been reduced by twenty-seven. The Council regret this very much, and still more regret the cause to which several of the withdrawals are attributable, viz., the formation of a new society by some of the gentlemen who were in the minority upon the question of election of President for last year. It is an unfortunate result attending any such secession, that it induces many to decline to attach themselves to either side of the question at issue, and to withdraw their aid from the common object of both parties. Hence, it appears to your Council that such a secession should not take place lightly, or unless a grave question of principle is involved. They fail to see in the present instance any justification whatever for the attempt to undo the beneficial work accomplished three years ago by the union of the two former societies in this Institute. The question, upon which a majority of two to one in the Council, and three to one in the Annual Meeting, decided against the gentlemen who have since formed themselves into a separate society, was entirely the personal one who should be President; and on such a question the minority should have accepted the decision

of the majority. An attempt has been made to justify the secession by raising the ghost of the discussions between the Anthropological and Ethnological Societies. Nothing could be more unwarranted by facts. The Anthropological Institute has, from the moment of its constitution, dealt with every question before it in the most comprehensive sense; it has not consciously neglected any branch of inquiry within the range of the science of Man; and every paper submitted to the Council has been judged and dealt with on its own merits, without reference to the question whether it belongs to a particular branch of the science, or deals with it on the theories of a particular school. The system of submitting every paper to two referees, carefully selected by the Council—and, if they differ, to a third—ensures an impartial and deliberate judgment upon its merits.

The new society was originally intended to be called Anthropological Association, a name which is quite unobjectionable; but it was finally announced as the London Anthropological Society, a name closely resembling that of the Anthropological Society of London, merged in this Institute. The Director was requested to point out to Dr. Charnock, the President, and Mr. Wake, the Vice-President of the new Society—who both signed the agreement for union in 1871—and Mr. Lewis, the Secretary, the inconvenience that would result from their adopting this name, but the Council regret that the representation was without effect.

The Library and Museum have received several valuable accessions during the year. Notably the collection of Peruvian skulls, pottery, and other objects, contributed by Consul Hutchinson, a collection so numerous that from it the President of the Institute was enabled, after selecting a sufficient number of typical specimens for permanent preservation in our own Museum, to present to the University Museums of Oxford, Cambridge, and Edinburgh, a similar set, and to hand over about a hundred specimens to the Royal College of Surgeons for preservation in their Hunterian Museum, where it is accessible at all times to the public at large. The following are the names of donors:—

The Rev. James Greaves; Academy of Science, Amsterdam; W. Topley, Esq.; James Burns, Esq., Palermo Institute; Editor *La Revue Scientifique*; Editor *Food Journal*; Editor *Zeitschrift für Ethnologie*; Imperial Society of Naturalists, Moscow; Royal Society; Lewis H. Morgan, Esq.; East India Association; Anthropological Society of Paris; Professor Ecker; Royal United Service Institution; Canadian Institute; Society of Antiquaries of London; Editor of the *Spiritualist*; Ethnographical Society of Paris; Dr. P. Mantegazza; Geologists' Association; Dr. G. W. Leitner; Consul T. J. Hutchinson; Dr. Robert Peel; Asiatic Society of Bengal; Dr. Paul Broca; Royal Academy of Sciences, Belgium; M. L. A. J. Quételet; M. J. C. Honzeau; Anthropological Society of Vienna; Royal Geographical

Society; Dr. Protheroe Smith; Social Science Association; Royal Asiatic Society, London; Inspector-General of Bengal; Inspector-General of New Zealand; Society of Biblical Archaeology; Royal Society of Tasmania; Morton Allport, Esq.; M. Léon de Rosny; Dr J. Oppert; M. C. De Labarthe; Royal Institution of Cornwall; Literary and Philosophical Society of Liverpool; Prof. Com. Luigi Chalou; Imperial Academy of Sciences, Vienna; Royal University of Christiania; M. A. Kiær: Editor of *Nature*; J. L. Laird, Esq.: American Philosophical Society; Editor of *Cosmos*; Lieut. Holland; Winwood Reade, Esq.; Philosophical Society of Glasgow; Gustaf von Düben: Imperial Academy of Sciences, St. Petersburg; Royal College of Surgeons; Rev. Dunbar I. Heath; Royal Society of Copenhagen; Dr. Bleek. The Executors of the late Henry Christy, Esq.; Professor Schaaffhausen; Théodore Wechniakoff; Hungarian Academy; Geological Society of Glasgow; M. Adrien Anelin: The Government of India; Colonel W. E. Marshall; Sir George Campbell; M. Igino Cocchi: Rev. W. Harpley; Major S. R. I. Owen; Clifford Smith, Esq.; Edwyn C Reed, Esq.; Manchester Society; M. Louis Rousslet; Rev. M. P. Clifford, D.D.; Dr. J. Simms; J. G. Avery, Esq.; Messrs. Hall and Co.; Dr. Hoffman; Captain S. P. Oliver; George St. Clair, Esq.; John E. Price, Esq.; Royal Society of Literature.

A new catalogue of the Library has been prepared; but, before sending it to press, the Council wish to offer an opportunity to any member of the Institute to contribute a copy of any work he may have written on anthropological subjects not as yet in the Library.

Registration.—The Council have decided, at an early date, to summon a special meeting, to adopt such alterations in the regulations of the Institute as may appear to be necessary to obtain for it the advantages of incorporation, under a licence from the Board of Trade. They are, briefly, to hold property in its corporate name, to sue and be sued as a corporation, and to limit the liability of every member to his subscription for the current year. These will commend themselves to the good sense and business habits of the members, and the Council anticipate no opposition to the proposal.

Journal.—Three parts of the Journal have been issued since the last annual meeting; and the Council believe that the members will admit that, for scientific value and completeness of illustration, the publications of the year are such as to maintain the reputation of the Institute. Their desire is, while maintaining such due regard to economy as will admit of the gradual diminution of the debts of the Institute, to supply the members with publications of real merit and permanent value. They will rejoice when the time comes that the complete extinction of the debt sets them free to devote the whole available income of the Institute for this purpose. That object is sadly delayed by such dissensions and secessions as marked the commencement of the present year; and the Council cannot but urge on all who are interested in the real progress of anthropological science to strengthen their hands by obtaining the accession of like-minded persons as contributing members. The

experience of the past has fully proved that the co-existence of two societies with the same object, appealing to a number of supporters, which is necessarily limited, must weaken both; and the Council of the Institute are disposed to waste no time in idle discussion, but to devote all their energies to render the Institute the full benefit of the broad basis and abundant scientific resources that it now has. When incorporated, as they shortly hope it will be, and free of debt—which cannot too soon follow—the rest will easily be attainable. But the Council must beg of the members, generally, assistance and support to effect these objects.

The Council have appointed the following special committees:—

Psychological Committee—Mr. Francis Galton, F.R.S. (Chairman); Dr. John Beddoe, F.R.S.; Mr. David Forbes, F.R.S.; Sir John Lubbock, Bart., F.R.S.; Mr. E. Burnet Tylor, F.R.S.; Mr. A. R. Wallace, F.L.S.; Mr. George Harris, F.S.A.

Physical Characters of Mankind—Professor George Busk, President (Chairman); Dr. Barnard Davis, F.R.S.; Mr. Luke Burke; Professor Rolleston, F.R.S.; Dr. A. Campbell.

Præhistoric Archaeology—Colonel A. Lane Fox (Chairman); Mr. A. W. Franks; Mr. E. W. Brabrook; Mr. Hyde Clarke; Mr. John Evans; Mr. F. G. H. Price; Sir John Lubbock, Bart.

Descriptive Ethnography—Mr. Clements R. Markham (Chairman); Mr. Bates; Colonel Lane Fox; Mr. F. G. H. Price; Mr. Hyde Clarke; Mr. H. Howorth; Mr. F. W. Rudler; Mr. J. E. Price.

Sir DUNCAN GIBB had much pleasure in moving the adoption of the Report of the Council, which on the whole was very satisfactory, and gave a good account of solid work done by the Institute during the past twelve months. Whilst he regretted the loss of so many members by death and by resignation, yet on the whole, after deducting the accessions, he was glad to learn that the actual number was not more than some twenty-seven altogether. He had feared that it would have been much more, and this, therefore, was better than he had expected. Regarding the schism that had existed this time last year, mentioned in the Report, although he was one of the minority, and voted as his conscience dictated, yet he had made up his mind beforehand to accept the results whatever they were, and to be contented with the logic of facts; he had not the remotest idea at the time of seceding from the Institute, and regretted that others had done so. When the two old societies were amalgamated he determined to give his best energies in helping to make the Institute a strong, powerful body, and he felt it would

have been an injury to the science promoted by the Institute to leave it because there had been a difference of opinion on the question of a house list, which, after all, was not a matter of very great consequence. He had great faith in the future of the Institute, and had no doubt in time it would become a powerful and influential body. Concerning the invitation from the Commissioners of the International Exhibition, he hoped that the Institute would accept it, and do all in its power to aid in getting up an Ethnological Collection, and that individual members would lend their co-operation in sending various objects to add to its value and success.

The motion having been seconded by Mr. W. L. Distant,

Mr. G. HARRIS said he should like much to know what was being done respecting the psychological committee, of which he was a member. Only one meeting had been summoned since the 7th of March, when a very satisfactory programme, as regards the proceedings, was arranged. Several gentlemen had been induced to join the institute on the appointment of the committee, from an expectation that something important would result from its labours. Some of them, one being a member of the committee, had written strongly to him (Mr. Harris) on the subject, complaining that the whole thing was a mockery and a delusion—a mere inducement held out to lead persons to join the institute. It was very unpleasant to receive such communications, and still more so to feel that the complaints made were deserved. He (Mr. Harris) would be glad to receive information that would enable him to give a satisfactory reply, which he was unable to do at present.

After further remarks, from Mr. Charlesworth and the Director, who, in the absence of Mr. Galton, Chairman of the Psychological Committee, gave some account of what that Committee had done, the motion was put and carried unanimously.

The PRESIDENT, on rising to deliver the Anniversary Address, took the opportunity of premising some observations on the present financial state of the Institute, as set forth in the Report of the Council and Auditors.

That statement showed that, although the income of the Institute was adequate to meet the current expenditure, it was made so by the strictest economy, which could only be exercised by curtailing to the utmost possible limits the expenses attending the publication of the Journal; the interest and utility of which would be much enhanced were it possible to devote larger funds to the purpose.

It was consequently obvious that so long as the income of the

Institute remained as it was, very little could be done towards the redemption of the remaining portion of the debt with which the Institute has been burdened since the amalgamation of the two societies. Although, owing to the strenuous efforts that had been made by the Council, this debt had been considerably reduced from its original amount, it had appeared to the Council that the time had arrived, when a final and united effort should be made to wipe off what remained of it, amounting to about £700, upon part of which interest was charged, involving an annual expenditure of about £20—a serious call upon a income already barely sufficient for the indispensable requirements of the Institute.

After anxious deliberation on the matter, the Council had come to the conclusion that the best, if not the only, mode of meeting the exigency was by means of a voluntary subscription amongst the members of the Institute, each contributing what he might think fit. It might be remarked that as the debt was about equal to a year's income, if each member thought fit to double his subscription for the present year, the entire debt would at once be extinguished. But as this was perhaps more than could be expected, the President announced that a sum of upwards of £200 had already been subscribed by Members of the Council, on the understanding that the remaining amount of £500, or the greater part of it, should be raised in addition by the members of the Institute, or by others who, though not members at present, may feel an interest in the science. He added an earnest hope that all members of the Institute would also endeavour to secure its increased prosperity and usefulness in future by the introduction of new and active members.

It was needless, he thought, to remark upon the certainty of renewed vitality and activity which would thus be communicated to the Institute, were it once relieved from a heavy incubus and enabled to devote its augmented funds to their legitimate purpose—the promotion of the Science of Man in all its multifarious branches.

He concluded by stating that a list of subscriptions to the "Redemption Fund," would lie at the office of the Institute, and that Mr. Collingwood would be authorised to receive the names of those who were willing to contribute to it.

The PRESIDENT'S Address.

GENTLEMEN,—Although I am unable to report any very remarkable event or advance in anthropological knowledge during the year 1873, nevertheless during that period many valuable and interesting communications on various subjects connected

with the objects of the Institute have appeared either in Journals or Proceedings of different societies, or in separate works.

To the more interesting of such of these contributions to science as have chanced to come under my notice, for I by no means pretend to give more than a small part of the anthropological literature of the year, I will briefly advert, with a view of marking out, though but in a superficial manner, the perhaps slow, but yet sure, advances that have been made in the different branches of the so-called "Science of Man."

In doing this it will perhaps be convenient to take the various subjects which come under our cognizance here, under the different heads of—

1. Ethnography, including under that term the languages, manners, customs and psychological peculiarities of different populations.

2. Of Prehistoric or Priscan Archæology; and

3. Of Descriptive Anthropology proper, including all points connected with the physical nature, conformation and relations with respect to the rest of the animal kingdom, of man.

Commencing as is fit with the record of our own labours contained in the Journal of the Institute, I would notice under the first of the above heads:—

1. A paper by Mr. Distant on the inhabitants of Car Nicobar, in which we have an interesting account from an eye witness of the manners and customs, and to a certain extent of the moral *status* of apparently a very primitive and simple race, which would seem to possess many of the virtues, and, so far as Mr. Distant's account extends, few of the vices of self-termed civilized man.

The chastity, honesty, cleanliness, and kindly bearing towards each other of the untutored natives of Car Nicobar may well be held up for imitation to ourselves; and it is to be hoped they may long escape the evils and miseries attending most attempts at the introduction of civilization.

2. A very different picture of savage life, however, is presented in Mr. R. Calder's notice of the now extinct native tribes of Tasmania, who, after the endurance of grievous wrongs and sufferings have happily for themselves been entirely exterminated.

In Sir John Lubbock's notice of the Macas Indians we are furnished with an account of the curious mode in which the heads of deceased chieftains and their wives have been converted into a sort of idol, whose worship, however, appears to consist more in abuse than in veneration.

Dr. Campbell's observations on the Looshais or Kookies with whom we were, not very long since, in hostile collision, forms, as he remarks, an appropriate continuation of Mr. St. John's paper on the Wild Tribes of Northern Arracan, and of Major Godwin-Austen's communications on the Garrows and Khasias. From this interesting paper, as from Mr. Distant's, it would seem that upon the whole a people deemed by us uncivilised and savage may yet be in possession of all that makes life happy and contented, and present moral and industrial qualities of no mean order, and we cannot but cordially concur in the hope, expressed by Major Macdonald, that contact with us will not degrade the Howlongs into Chukmaks or Tipperakes. At present, according to that writer, "no happier people can be found in the world."

Dr. Reid's remarks on the Religious Belief of the Ojibbways or Sautaux Indians around Lake Winnepeg contain much interesting information connected more especially with the Indian belief respecting a future state. It has been supposed by some, that were all European and foreign immigration stopped, the population of America, by a process of natural selection, it is to be presumed, would, in course of time, relapse or advance, as the case might be, into the Red Indian type; and with reference to this notion it is curious to remark that, even now in the full glare of modern civilization and in the midst, as we are told, of the most universally educated people in the world absurd beliefs are largely popular which may be traced to Indian parentage—such, for instance, as the fancies of the spiritualists; and, curiously enough that the clever juggling tricks of the Davenport Brothers, whose miraculous nature at one time found believers even amongst ourselves, and may do now for what I know, appear to have been originally practised by the Indian tribes.

Herr Von Brandt's paper on the Ainos, of which a translation is given in the *Journal of the Institute*, conveys much

information concerning the interesting apparently aboriginal inhabitants of Japan ; of whom, however, Lieut. Holland's communication gives a far more complete account :—the best in fact, so far as I am aware, that has as yet been published of the manners and habits of the Ainos. To Lieut. Holland, moreover, we have been indebted for the exhibition of a valuable series of original photographs of the people, and of various articles of Aino manufacture.

The subject was further illustrated on the same occasion by a curious Japanese roll of coloured drawings illustrating their national manners and customs, exhibited by Mr. Franks.

Mr. Howorth's tenth and eleventh communications on the westerly drifting of the Nomades, are devoted principally to the subject of the connection between the Alans and Lesghs.

Connected in some measure with the same part of the world is Mr. Hyde Clarke's paper on the traces of an Egyptian colony in the Caucasus. His remarks are directed principally to pointing out what he conceives to be affinities between the Ude language and the Coptic. Of physical characteristics he says nothing, and if it were true that Sesostris left a colony of Nubians behind him, it is clear that traces of a language may remain long after all those of blood have disappeared.

Mr. Howorth's paper, entitled " Strictures on Darwinism," is devoted chiefly to the fact that races mainly of domesticated or semi-domesticated animals have at various times been replaced by other races introduced by the agency or in the company of man, *ab externo* ; or, in the case of wild animals, when by changes in the physical conditions a region has become unfitted to maintain its original denizens.

It is clear, however, as it appears to me, that such instances as these have but a very distant relation to the fundamental doctrine that natural selection is at any rate one of the causes by which existing species have been produced from precedent forms. Consequently the considerations derived from these instances can hardly be regarded as applicable to that part of the Darwinian hypothesis.

To take an extreme instance, surely no one would contend that the sheep dog is an example of the transformation of the

wolf into the dog by means of natural or any other selection, except artificial, any more than he would cite the native-born colonists of Australia or America as showing the metamorphoses of the aboriginal into the European type.

Of course Mr. Howorth says nothing so absurd as this, but it appears to me that his argument, if stretched to the utmost, would tend to such an extravagant result.

The displacement of one race by another, either in consequence of human agency or by the operation of natural causes acting in what may be termed brief periods of geologic time, has nothing to do with the hypothesis of "Natural Selection" as an agent in the origination of species.

In a communication in the "*Archiv für Anthropologie*," Dr. Paul Langerhaus gives us an ethnographical account of the present inhabitants of the Holy Land, illustrated by numerous and highly-expressive woodcut figures taken from photographs. For notwithstanding the prohibition in the Koran against the making of any representation of the human figure, Dr. Langerhaus appears to have met with no hindrance to his taking as many photographs as he wished. The subjects were for the most part obtained at Jerusalem, which, according to him, is a great place of resort for nearly all the Western Asiatic and East African races, and consequently an excellent site for the ethnographical student.

Amongst other nations he found examples of natives of Armenia and Kurdistan, together with Copts, negroes from Dafur, and some individuals from other far distant tribes of Soudan. Of these he had already published an account in the "*Zeitschrift für Ethnologie*," and the present communication is limited entirely to the Arab tribes of Palestine.

Amongst separate works on ethnographical subjects, one of the most important that has appeared for many years is the "*Descriptive Ethnology of Bengal*," compiled by Colonel E. T. Dalton, C.S.I. Commissioner of Chutia, Nagpore.

The work has been compiled from the researches of Dr. Simpson, Dr. R. Brown, and the Messrs. Peppé, who were sent by Government order into the wilds of Assam, Munipore, and Cattaek to describe and photograph the specimens of savage humanity there to be met with, apparently in a still very un-

sophisticated state. The result of the united labours of these observers under the able editorship of Colonel Dalton is a 4to. volume of 350 pp., illustrated with 37 plates lithographed from the original photographs under the superintendence of Dr. G. Wallich.

In this volume the most interesting information will be found concerning the physical character, manners, customs, and languages more especially of the Indo-Chinese tribes of the Assam;—and nowhere, to borrow the words of a notice of this volume in the *Times*, “will there be found such a mass of elegant and charming descriptions of primitive customs, dances, songs, and beliefs as Colonel Dalton has here put upon record.”

Nor should I omit to notice the remarkably interesting account, recently published, of Dr. Schweinfurt's travels in Central Africa, in which will be found numerous ethnological observations and facts of very great value. The additional knowledge afforded us by Dr. Schweinfurt respecting the so-termed pigmy races of the interior of the African Continent is very acceptable. From what he states, taken in conjunction with the previous observations of Du Chaillu and other travellers, it appears to be by no means improbable that the dwarf race of brown negroes, of which Dr. Schweinfurt had an opportunity of examining a few specimens from the country south of the Niam-Niam Kingdom, are in relation on the one hand with the dwarf Bushmen race of South Africa and with the similarly small race noticed by Du Chaillu in the west.

There seems to be little reason to doubt that it is this race that gave rise to the ancient legends of a nation of pigmies inhabiting the interior of Africa alluded to by Homer, further mentioned by Herodotus, and positively asserted to exist by Aristotle.

2. Under the head of “Prehistoric or Priscan Archæology” several interesting communications have been made at meetings of the Institute, whilst numerous papers on this highly popular branch of Anthropological inquiry have appeared elsewhere.

I might, more particularly, notice amongst our productions one by Sir Duncan Gibb “On Stone Implements and Fragments of Pottery from Canada.” The brief remarks by Dr. Barnard

Davis "On Specimens of Ancient Peruvian Pottery." The notice by Mr. Whitfield of mysterious rock inscriptions in Brazil, draws attention, as I have before taken occasion to remark, to the apparent resemblance of those inscriptions to rock-markings of a similar nature in Andalusia.

From Mr. A. Carmichael we have an interesting account of a "Hypogæum" in the Island of Uist, containing bones of the deer, ox, swine, and sheep—which were mostly splintered for the extraction of the marrow.

Under this head, I would also refer to a short communication from Mr. F. Calvert, "On the probable Existence of Man during the Miocene period," if only to explain that the grounds adduced by Mr. Calvert for the supposed existence of the human race in the Miocene period appear to me to be extremely slight.

The main fact of which we are informed, upon which Mr. Calvert appears to rely, is the circumstance that a flint flake and some bones of animals, apparently fractured by the hand of man, were found in various parts of an inland cliff from the face of which Mr. Calvert had himself extracted bones and teeth of the *Dinotherium* and shells of a species of *Melania*; the former of which does not occur later than the Miocene period, whilst the latter, though still existing, may be traced back to the same epoch.

The most curious part of Mr. Calvert's communication, however, refers to the discovery of engraved figures on a fragment of bone regarded by him as belonging to *Dinotherium*. I am not aware upon what evidence this determination rests; for, although from the figures sent by Mr. Calvert there can be no doubt of his having found the tooth of a *Dinotherium* in or near the same locality, it does not follow, without further evidence, that the bone he mentions should necessarily belong to the same extinct species. The presumption is in favour of regarding these undoubted miocene fossils as in reality extraneous to the actual deposit in which they occurred, and of viewing the latter consequently as a *remanié* formation.

It is nevertheless much to be desired that Mr. F. Calvert should continue his important researches in the Troad.

In the very useful periodical *Matériaux pour l'Histoire primi-*

tive et naturelle de l'Homme," we find in the volume for 1873, a paper by Dr. Gross on Lacustrine Dwellings on the Lake of Bienne, which contains much valuable matter, and forms a considerable addition to our previous knowledge of that locality. One additional fact is the discovery of Bronze and Iron Implements in one or more of the stations on that Lake, which would thus, as remarked by Dr. Gross, seem to afford evidence of its having been successively tenanted, at different parts of its circumference, by populations belonging to the Stone, Bronze, and Iron ages. It thus affords as it were a link between the Lakes of Eastern Switzerland, in which the habitations appear to belong almost exclusively to the Stone age, and those in the Western Cantons in which indications of the Bronze period seem to predominate. Whilst at the same time the Lake of Bienne connects both of these with the later Iron period.

Amongst other points noticed by Dr. Gross is the existence amongst the stone implements from one of the stations, of several composed of nephrite and others of jade of large size. These minerals, as he points out, are of great interest, seeing that neither of them are indigenous, but must have been introduced either in the rude or manufactured condition from the far East—the former occurring native, as it would appear, only in Turkestan and Siberia in the neighbourhood of the Baikal Lake, whilst in Europe and Asia, jadeite is found only in China in the Province of Kiang, &c. Dr. Gross deems it impossible that at that period these articles should have been introduced by way of commerce, and supposes that they must have been brought by tribes that had migrated slowly westwards in the long course of time. It is, however, allowable to surmise that a few articles of such valuable materials may have been transmitted from hand to hand, though not in the way of any regular commerce.

In the same *Journal*, we also find accounts of the Exploration of a large Dolmen or Passage-Tumulus of the Bronze age, at Plougoumelen in Brittany by M. Gall; and of certain dolmens of the same age, in the Department of the Lozère, by M. de Malafosse.

A large Dolmen has also been explored by MM. Retzius and Montelius at Karleby in Sweden, in which were discovered no

less than eighty skeletons of adults and infants. The skulls unfortunately were mostly crushed, only five being found whose shape could be determined. Four of these were dolichocephalic .710—.757, and one highly brachycephalic .844, like those found in the *tumuli* of Borreby, &c.

Passing further south, it should be recorded that M. Rivière has diligently pursued his exploration in the Ossiferous Caves in the neighbourhood of Mentone, and has been rewarded by the discovery of a second, and, I believe, of a third human skeleton under the same conditions as those which attended the discovery of the "Mentone Skeleton" now in the Paris Museum, whilst his collection of specimens of human art in Flint, Bone, and Shells has been vastly increased. We shall look forward with much interest for an account of the results of Dr. Rivière's continued labours.

M. A. Locard* notices the discovery of human Remains in the Ossiferous Breccia of Corsica accompanied by abundance of bones of *Lagomys corsicanus*, a species of Pike or Tailless Hare, now extinct, and belonging to a genus strongly indicative of an extremely rigorous climate, modern representatives being found only at high altitudes in Siberia, a country also in which it may be observed the Argali closely resembles, if it be not identical with, the Mouflon (*Ovis Musimon*) of Corsica, whose remains were also found in the same breccia with the human bones.

Dr. Hamy has furnished in the *Comptes rendus* a valuable communication on the subject of the age of the so-termed Fossil human remains found in the Coral—or Calcareous tufa of Guadeloupe. A very perfect skeleton in its matrix is, as is well known, in the British Museum. In a block of the same tufa in the Paris Museum, Dr. Hamy has discovered beneath the lower jaw of the skeleton, and amongst fragments of ribs and other bones, a jade amulet twenty millimeters in length by seventeen wide, and nine thick, representing roughly the figure of a species of Batrachian, and perforated so as to show that it was intended to be worn as an amulet around the neck. As M. Du Tertré† de-

* "Comptes Rendus," Feb. 16th, 1873.

† R. P. Du Tertré, "Hist. Génér. des Antilles," 1667.

scribes Carib ornaments, composed of a similar green stone, "which had the form of a Frog," it is thus clearly proved that the Guadeloupe skeleton belongs to the Carib Epoch, as was supposed by M. Ernouf. (*Ann. du Mus.*, t. v, p. 404, 1805).

M. P. Gervais (*Journal de Zoologie*) notices the occurrence in the Argentine Republic of human remains associated with bones of extinct animals.

In our own country one or two occurrences of the same kind have also been described. One of these was the discovery by Professor T. McK. Hughes of a human tooth, to all appearance of the same age as those of the Bear and Hyena, in the Cave of Pontnewydd, in North Wales, which is somewhat remarkable on account of its unusually large size. A second instance is that of a fragment of human fibula met with at the entrance of the Victoria Cave near Settle in Yorkshire, of which I had the honour of giving a brief account at a late meeting of the Institute. The conditions under which this relic was discovered have led Mr. Tiddeman and Professor Boyd Dawkins, though not, I believe, through exactly the same mode of reasoning, to conclude that the owner of the bone must have lived in or before the Glacial period. As I hope this part of the subject will be amply discussed here by those whose geological knowledge will enable them to speak authoritatively upon it, I will now only remark that, should the age of the bone really prove as ancient as there is every reason to believe it is, the Victoria relic will represent one of the most ancient specimens of humanity yet brought to light.

Assuming its remote antiquity, this fragment of pre-Glacial humanity, so far as it goes, affords no evidence that the human frame differed from that of the present day. By a curious coincidence the fibula of the first discovered Mentone Skeleton, which, though far more recent in all probability than the Victoria Cave specimen, is still of very respectable antiquity, possesses unusual characters in common with it, and it might thence, perhaps, have been fancied that priscan man had at any rate far clumsier legs than his modern representatives, but we do not find that this is the case, for the discovery in the Museum of the College of Surgeons of a recent bone very nearly

as thick as that from the Victoria Cave suffices to prove that both it and the *fibula* of the Mentone Skeleton may be only exceptional cases, and cannot be regarded as indicative of any important difference of conformation between ancient and modern man.

In a paper on "The Rein-deer Station of Veyrier," M. Rüttimeyer expresses the opinion that the Rein-deer and Horse might have been both domesticated in that locality. It is at any rate a remarkable circumstance that the rein-deer should have inhabited an alpine district in company with the red deer, ibex, and chamois, since in nature these species are never found associated with it. It would appear probable therefore, as M. Rüttimeyer suggests, that the reindeer was introduced by human agency.

On the occasion of the exhibition of a large number of ancient Peruvian skulls, forwarded to the Institute by Mr. Consul Hutchinson last April, a small collection of ancient Peruvian works of art was also exhibited, amongst which were several specimens of pottery from the ancient "huacas," or burial mounds. Some of these were ornamented with figures of the human form or face. With relation to fictile ware of this kind, we find a communication, by M. C. Rau, in the *Archiv für Anthropologie*, drawing attention more particularly to the circumstance that similarly ornamented vessels are found also in Europe, where they have attracted the attention of Archaeologists under the name of Face-urns or *Gesichtsurnen*. M. Rau proposes to divide this class of pottery into two kinds, according as the human face is placed on the body of the vessel or on its neck, or in some cases on the lid or cover. He remarks that in the European instances these Urns appear in all cases to have been cinerary, whilst, on the contrary, those found in America were more probably water-vessels, which, after the death of the owner were placed in his tomb.

As in Europe, so also in America, the Face-urns may be divided into three classes:—

1. Those having the human face on the body of the vessel.
2. Those in which the human head is placed in the neck of the urn, of which it forms the mouth.

3. Those in which the entire vessel is constituted of a crouching or kneeling figure.

Vessels of this kind have also been found, it would seem, extensively in North America as well as in the Peruvian tombs, affording an additional proof, if any were needed, of the community of customs, art, and, probably, therefore, of race, which must at one time have pervaded the entire Continent.

M. Adrien Arcelin has published a brief memoir* containing much interesting matter respecting the relics of the pre-historic inhabitants of the Nile Valley.

The fact that stone implements were occasionally found in Mummy cases has been known since the time of Champollion, and M. Passalacqua has described two beautifully finished implements from the Necropolis at Memphis, whilst Lepsius records the discovery of flint-knives in a tomb situated north-east of the Great Pyramid, the age of which is given as about 3000 A.C. But notwithstanding this the subject of pre-historic remains in Egypt does not appear, until very lately, to have attracted the critical attention of archaeologists.

The first endeavours in this direction were made by M. Arcelin, in conjunction with M. le Vicomte Murard, in 1868-9. Their explorations were made with the special view of ascertaining whether indications of a pre-historic Stone Age of the same kind, as those which have been afforded in all parts of Europe, were to be met with in the Valley of the Nile.

The importance of such a discovery in Egypt in an ethnological point of view could hardly be overrated.

The labours of MM. Arcelin and Murard were soon rewarded by the discovery of abundance of flint implements, more especially in the neighbourhood of Gizeh, Sacquarrah, Thebes, &c.

The implements were found either on the high plateau of the Valley or beneath the fluvial deposits of the River above the pliocene or quaternary beds. The modern deposits of the Nile afforded not a single specimen, nor were researches in the ruins of the ancient cities, nor in the disturbed ground where excavations had been made in the exploration of monuments, more

* "*L'Âge de Pierre et la Classification Préhistorique d'après les sources Égyptiennes*," 1874.

successful. In fact no trace of stone implements was discovered by MM. Arcelin and Murard in inhabited sites belonging to the historic period. Whence they conclude that implements of that nature have not been in use since the historic epoch, and that the beds containing them in the lower part of the valley must be sought for at a very great depth beneath the Nile deposits. Elsewhere, they are found only at the extreme verge of the fluviatile beds where they thin out towards the desert.

But this appears to be hardly in accordance with the previous discoveries, above alluded to, and with those of M. Rossellini and Prof. Lepsius, who met with flint implements in Mummy cases and Tombs. Nor is it to be reconciled with the subsequent finds by MM. Hamy and Lenormant, who met with a very extensive collection of knives (flakes), cores, and rude implements, of the same character as found at Moustier, in the neighbourhood of Biban-el-Molouk and at Deïr-el-Bahari. The same observers, encouraged by these and other discoveries, pursued their search for stone implements with renewed zeal, which was followed by the discovery opposite Memphis of numerous flint flakes, glazed from their having long lain in the sand.

M. Arcelin's discussion of the objections raised by Prof. Lepsius and M. Chabas against the received doctrine of there having been distinct ages of Stone, Bronze, and Iron, is well worthy of perusal.

CRANIOLOGY AND DESCRIPTIVE ANTHROPOLOGY.

In the usually fertile and apparently facile field of craniography and craniometry, the past year has not afforded any very important contributions.

As regards craniography, or the art of making graphic representations of the skull, the great advocate for the employment of the geometric method, Professor Lucæ, has published in the *Archiv für Anthropologie* a brief paper, chiefly, however, with the view of introducing two new contrivances for fixing the skull in suitable positions for its being drawn in different views in places at right angles with each other. An object, one would have thought, not very difficult of attainment. He shows also,

in another part of his communication, that geometric drawings are not fitted for the erection of stereoscopic figures.

With reference to this communication of Dr. Lucæ's, I would merely take occasion to remark, as I have often done before, that in my opinion perspective drawings are for most purposes much to be preferred to those made in geometric projection. With respect to the alleged facility the latter may afford for taking measurements, it appears to me that with proper arrangements the same advantages may also be obtained from the use of perspective figures. And as the latter must at any rate convey to the eye a more natural and correct view of the object itself—surely one of the main purposes of all figures—it seems to me that they should be preferred to geometric drawings, which at best can scarcely be regarded as more than diagrams.

On the subject of craniometry, two important communications have more particularly attracted my attention during the last year. One by Dr. H. von Jhering, which has appeared in the "*Zeitschrift für Ethnologie*," and the other by my friend Dr. Broca, in the *Bulletins of the Société d'Anthropologie of Paris*.

The former paper, though somewhat assuming in its tone, is well worth the attentive consideration of those who are interested in the mensuration of skulls.

As Dr. v. Jhering remarks, almost every year furnishes us with some craniometrical novelty, few of which, however, can be regarded as at all conducive to scientific progress. And it would, as he says, be extremely desirable if by common consent some fixed and determinate plan were laid down for general employment. The data derived from the labours of different craniologists might then admit of correlation, which they can hardly, or to a very limited extent, be said to do at present, when scarcely any two observers follow the same plan, adopt the same terms, or have even the same ends in view. This condition of things is much to be lamented, leading as it does to an infinite loss of labour and pains bestowed in the collection of data, which are in great part altogether valueless for any purpose of comparison, or, perhaps, fully intelligible only to the individual observer himself.

The principal object of craniometry, regarded in an ethnolo-

gical point of view, or as a means of instituting comparisons with respect to the cranial conformation of different races, is, as it appears to me, to obtain such measurements of the dimensions and proportions of the *calvaria* proper, and of its adjunct the face, as may afford a tolerably clear and accurate idea of them.

For this purpose we should have measures (1) of the size and proportions of the skull as a whole, that is to say in its three dimensions of length, breadth, and height. (2.) Of the relative proportions, as regards volume, of the three great divisions or regions of the skull—viz., the anterior or frontal, the median or parietal, and the posterior or occipital. Besides these measures, which appertain solely to the braincase, we should be able to state the proportionate size of the facial bones, and more especially of the masticatory organs, as measured by the size, etc., of the orbits, the width of the zygomatic arches and the degree of projection of the jaws.

But, as Dr. v. Jhering truly remarks, no measurements for these, or for any purpose, are of the slightest value for comparison unless they are rigidly taken with reference to some common line or base. The main question, therefore, as he puts it, is to determine how we are to fix upon this indispensable base line.

He says that many authors have altogether arbitrarily denominated certain points as "fixed," by which he would appear to understand that the authors in question regard these points as "fixed" in their relative position with regard to the structural plan of the entire skull. I do not think, however, that this is exactly the meaning of the word "fixed," at least in the minds of all the authors in question. A given point may be fixed upon for the purpose of measurement, as for instance the most prominent points of the zygomatic arches, the alveolar border of the maxilla, the nasal spine, the points of the mastoid processes, etc., which have no fixed relation to the rest of the skull, but yet which may be used for the purpose of measuring from. Other points, however, there are which deserve to be called "fixed" in a more absolute sense, and, as such a point in particular, I regard the external auditory opening, to which Dr. H. v. Jhering, though employing it himself, raises the same objection

as might properly be raised to the admission of such points as those above enumerated, which of necessity vary without reference to the skull as a braincase, and have chiefly reference to varying muscular requirements. It would be impossible here to enter at any length into the interesting discussion of the points raised by Dr. v. Jhering, and I will only briefly state that notwithstanding his strongly-worded objections to nearly all that has been done or adopted by others in this regard, he is himself obliged to lay down, as it appears to me, just as arbitrary a base for his measurements as is that of any one else. His panacea for all the evils and mistakes of craniometry, as heretofore practised, consists in the laying down, of what he is pleased to term, a horizontal line. Why he so terms it, however, in preference to any other, I must confess I am at present unable to perceive. His horizontal line, as I understand him, is one drawn from the centre of the auditory foramen to the lower border of the orbit. But if a line be drawn in this direction upon any correct figure of a skull, it will be seen that if it is made to lie in a horizontal plane, the face and eyes, instead of looking straight-forward in the same plane, will be inclined downwards. The "*os sublime*," distinctive of man, will become an "*os declive*." Again, although I am strongly of opinion that the centre of the external auditory opening is a most proper and convenient starting point for most of the measurements of the skull, and may, perhaps, be regarded better than any other point as absolutely fixed in relation at any rate to the calvaria and brain, the same cannot be said of the lower border of the orbit, a point that I should regard as perhaps one of the most unstable that could be selected; at any rate it is quite as much so as the floor of the nostrils or the nasal spine, and far more so, in my experience, than the line of the zygomatic arch.

The proper horizontal line of the skull should be one, as it appears to me, that is, in a plane parallel with the centre of the eye or very nearly so, or in other words the head should be considered as in the horizontal position when a man is looking straight before him in a truly horizontal plane, level with the pupil. The question is how is this horizontal plane to be determined. In all normally formed skulls, and, strange to say, in

many that have been to a considerable extent altered in shape by artificial deformation, it may be determined with very great facility. If a line be drawn from the centre of the auditory foramen to the *bregma* or point of junction of the sagittal and coronal sutures, we obtain a line which may be regarded as nearly as possible a vertical one. If another line be drawn at right angles to this, also through the centre of the auditory opening, we obtain a horizontal line which will almost invariably be found to lie in a plane parallel to the visual axis. It will also, I would beg to remark, be in nearly all cases exactly parallel with the proposed condylo-alveolar line of M. Broca, as well as with Von Baer's horizontal line, which he determined by the upper border of the zygoma, but which, having regard to the varying forms of that process, might, perhaps, more definitely be described as running along the mean axis of the zygomatic arch.

A further point, much and very properly insisted upon by Dr. v. Jhering, is one that has always appeared to me of the utmost importance, as inattention to it will serve to render nearly all our measurements of no comparative value whatever. This is, that whatever line or place we assume to be horizontal or vertical, as the case may be, the various measurements of length, breadth, height, and several other of the straight measurements, must be taken with direct reference to it, that is to say, in lines either parallel or at right angles. This is a proceeding I have myself invariably followed, and it is a point upon which too much stress cannot be laid. Nor with such a simple instrument as the craniometer, which goes under my name, is there the least difficulty in conducting measurements in this way.

Consequently I am quite inclined, so far, to agree with Dr. v. Jhering in asserting that if this principle be correct, which can hardly be disputed, we have no choice but to reject for purposes of comparison all existing tables of measurements not taken in accordance with it, and that to that extent craniometry must be almost recommenced. I do not, however, go so far as to allow that Dr. v. Jhering's horizontal line or base is the best that can be taken. The important question then at the present time, I may again repeat, for craniologists to determine is, in the

first place, what are the true horizontal and vertical planes of a skull ; and secondly, how those planes are most certainly and most conveniently to be determined.

I have already stated my opinion, but I should be quite prepared to adopt M. Broca's or Professor V. Baer's lines, because, though I think they are taken from more unstable points than mine, they nevertheless are in most cases exactly coincident with it.

Having agreed upon the proper mode of obtaining measurements, if we ever do agree, it remains to inquire how these measures are to be employed ; what information can be gained from them.

In order to render cranial measurements of any practical value to the ethnologist, they must in the first place be collected in sufficient numbers to allow an approximately correct mean to be drawn from them ; and secondly, they must convey a knowledge of the limits within which each of the particular measurements in each set may vary.

Dr. v. Jhering is of opinion that, all precautions having been taken and every allowance made, it will nevertheless be found that the same cranial type will be met with amongst the most diverse peoples and races, and on the other hand that the most diverse types of skull will be found amongst the same people. This is no doubt the case, at least among all civilised populations, but I do not on that account agree with him in condemning all craniological data in consequence. On the contrary, I should assume that the craniological indications were a certain proof that the population or race amongst which these diversities of cranial form existed is a mixed one, and that were our knowledge of the subject sufficiently accurate and extensive, and our means of observation sufficiently abundant, the surest conclusions may be drawn from the craniological characters as to the sources and affinities of the various constituent elements of a heterogenous population.

It should never be forgotten, however, that the study of craniology is almost futile when applied to highly civilised and consequently much mixed peoples, and that its indications are most easily made out, and most certain in proportion to the

purity of race. This purity at the present day is rapidly disappearing, but is still to be found among many existing savage tribes, and it was no doubt more and more predominant in proportion to the antiquity of the priscan or prehistoric races of mankind.

Dr. Sass has described a series of ten ancient Batavian skulls procured from the island of South Beveland, in the province of Zealand. The district in which they were found was submerged by the sea in the year 1530, and at high water is now covered by the tide. The skulls in question therefore afford a notion of the cranial conformation of the inhabitants 300 years ago, and are so far of considerable interest. The most remarkable point connected with them is that they are all strongly brachycephalic. Dr. Sass was deeply impressed by the contradiction thus afforded to Retzius' statement that skulls of Teutonic origin were long, and he soon found that a considerable number of crania from the province of North Holland were also decidedly brachycephalic, only 36 per cent., in fact, having a latitudinal index of less than 800.

We must thence conclude that in Holland there is a large admixture of a brachycephalic race, probably indigenous before the advent of the Teutonic element.

And it is a remarkable circumstance, pointed out by Dr. Sass, that nineteen Frisian skulls from the peat near Bolsward, in Friesland, afford a mean latitudinal index of 779, whence it appears tolerably certain that the Teutonic or Scandinavian element of the population was derived from Friesland. It would further appear that dolicocephaly is more common now than it was 300 years ago in North Holland.

I much regret that my space will not allow me to do more than call attention to Professor Virchow's important paper on the ancient and modern skulls of Belgium.

Some of the principal conclusions, however, arrived at by Professor Virchow may be briefly stated.

1. That the skulls found in the Belgian caves admit of being divided into certain distinct groups, having manifestly little or nothing in common. Each of these groups should be separately

compared with the later tumulus-crania and those of the modern population.

He arranges the cavern-crania in the following chronological order :—

1. Of the Mammoth period—the Engis skull.
2. Belonging to the Reindeer period, under which head comes the much discussed Furfooz cranium.
3. Skulls belonging to the Neolithic period, from Chauvaux and Sclaigneaux, and, perhaps, the peat-crania of Antwerp, etc.
4. To the first glacial period he refers the skull from the “Trou de Madame,” near Bouvignes.
5. The Roman period affords the skull from Eysden or Castert, whilst—
6. The cranium of Chevremont is assigned to the Frankish period.
7. And that from Meerssen near Limbourg to the 12th century.

Mr. A. W. FRANKS moved and Mr. Consul T. J. HUTCHINSON seconded—“That the best thanks of the meeting be given to the President for his address, and that it be printed in the journal.”—Carried.

Thanks having been voted to the retiring members of Council, The scrutineers brought up their report and declared the officers and Council elected to serve for 1874 to be as follows :—

President.—Professor George Busk, F.R.S.

Vice-Presidents.—John Evans, Esq., F.R.S., Colonel A. Lane Fox, F.S.A., A. W. Franks, Esq., M.A., Francis Galton, Esq., F.R.S., Professor Huxley, F.R.S., Sir John Lubbock, Bart., F.R.S.

Director.—E. W. Brabrook, Esq, F.S.A.

Treasurer.—Rev. Dunbar I. Heath, M.A.

Council.—John Beddoe, Esq., M.D., F.R.S., W. Blackmore, Esq., H. G. Bohn, Esq., F.R.G.S., A. Campbell, Esq., M.D., Hyde Clarke, Esq., J. Barnard Davis, Esq., M.D., F.R.S., W. Boyd Dawkins, Esq., F.R.S., Robert Dunn, Esq., F.R.C.S., David Forbes, Esq., F.R.S., Sir Duncan Gibb, Bart., M.D., George

Harris, Esq., F.S.A., J. Park Harrison, Esq., M.A., J. F. McLennan, Esq., C. R. Markham, Esq., C.B., F.R.S., Frederic Ouvry, Esq., F.S.A., F. G. H. Price, Esq., F.R.G.S., J. E. Price, Esq., F.S.A., F. W. Rudler, Esq., F.G.S., C. R. Des Ruffières, Esq., F.R.S.L., E. Burnet Tylor, Esq., F.R.S.

A vote of thanks was passed to the auditors of the accounts, viz. : Major S. R. J. Owen and Mr. F. G. H. Price.

On the motion of the President, a vote of thanks to the scrutineers for their services was passed and the meeting separated.

ANTHROPOLOGICAL MISCELLANEA.

NOTE ON EASTER ISLAND WRITING.

THE signatures of the chiefs of Easter Island to the treaty made with the Spaniards in 1770 (see page 382), having been accurately traced by Senor De La Rosa from the original characters in the MS. in his possession, it has been thought desirable to print them, for the purpose of comparison with the hieroglyphics on the tablets. From the extreme rarity of anything approaching to writing in the Pacific a singular interest attaches to them.*

The symbol to the right (see plate xxvii.) is assumed to be the signature of the king of the island. It stands by itself, and appears to represent one of the figures—half men and half birds—which it has been supposed symbolise chiefs.

The characters in the second or middle column may perhaps form the name of a chief next in rank; or possibly a priest. There are four signs in this column, of which the third from the top is similar to some in the tablets.† The third column from the right contains eight characters. They probably, form a single name. It was suggested (p. 380) that this might possibly also be the case with some of the groups of signs on the reverse side of the tablet (Plate 21).

Senor De La Rosa agrees in thinking that the characters, generally, indicate a more perfect system of writing than the incised signs. They are not unlike some that he has met with in Central America.

It will be observed that the signatures are written vertically.

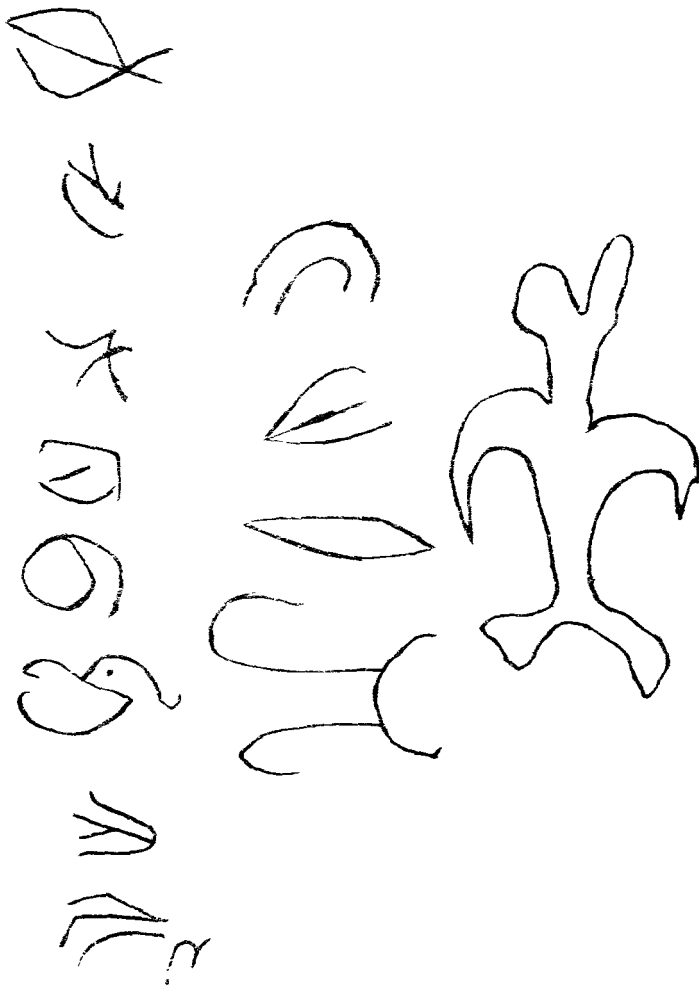
J. P. H.

HAMATH INSCRIPTIONS.

IT will be remembered that the first identification of the Hamath sculptures, as inscriptions, was made at the Anthropological Institute by myself on the occasion when Captain Burton brought forward the first copies seen here. It was, and long remained, a matter of doubt among men of science, and I may say with many it remains so still, whether these are truly inscriptions. Several eminent scholars have spent their time unsuccessfully upon them. During the short period of the evening's meeting I was enabled to make an adequate examination, and to announce that the sculptures represented inscriptions, that the characters were recurrent, were not mainly ideographic nor

* The chiefs in New Zealand are said to have used their distinctive tattoo marks as signatures, very much in the same manner.

† The words "some of," were inadvertently omitted in line 1. p. 383.



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Egyptian, and that they must be either alphabetic or syllabic. The results appear in this journal as well as those of subsequent investigations, to which I devoted much time and in which I ascertained that the inscriptions included parallel passages, and that some of the characters resembled Himyaritic, Libyan, Cypriote, etc., and were to be found in the Warka hieratic character in the cuneiform, and were employed for centuries in Babylonia. These results, published in these pages, in the *Athenæum* and *Palestine Exploration Journal*, were further embodied by Captain Burton as an appendix to the first volume of his *Unexplored Syria*. With regard to the language, my opinion was and is that it belongs to the Paleogeorgian or Sumerian class, and as to the character, I consider it to be an independent derivation from a stock, of which the hieratic and cuneiform are branches, as well as the Phœnician.

Mr. Dunbar Heath took up the subject of the parallel passages and illustrated them with great labour and ability. Whatever difference of opinion there may be between us as to the Egyptian character of the inscriptions, he has left no room for doubt on the subject of the parallel passages. It may be mentioned that incidentally my investigations have thrown a light upon several points connected with the ethnological relations of the protohistoric period, and that they are receiving support and confirmation from scholars. Indeed his results have been accepted bodily in an illustrated paper on the Hamath inscriptions in the American Palestine Exploration Society's second statement by the Rev. W. Hays Ward, who has fully acknowledged his obligations to Mr. Heath.

Not so with regard to myself. Not only does not my name appear, although the *Unexplored Syria* is mentioned, but I am made contributory without my will for a learned dissertation on the Himyaritic and Cypriote relations. Had Mr. Heath and myself been both mentioned the whole dissertation would have appeared as a simple compilation of the learned doctor, so I was offered up as the victim to provide sheep and clothing for the Rev. Dr. Ward.

While establishing the claims of the Institute, of Mr. Heath and of myself to the foundation of the Hamath investigation, it may be useful to say a few words more. It is now coming into evidence by late investigations that Cypriote is a class independent of Phœnician in many of its attributes, and that it has separate relations. If on the basis pointed out by me these relations are found to be with other groups indisputably distinct from Phœnician, it will present us with a new aspect of the history of the alphabetic question.

It is also to be noticed that since the Hamath stones have been transferred to the Imperial Museum at Constantinople they have been put into the hands of a distinguished scholar, the Count de Vogué, the French Ambassador, and if he has done nothing more he has discovered another inscription behind one stone.

32, *St. George's Square, S.W.*

HYDE CLARKE.

Jan. 31, 1874.

MOURNING FOR THE DEAD AMONG THE DIGGER INDIANS.

WHILST taking an ornithological ramble down that grand bit of Nature's scenery, "The Yosemite Valley," in the Sierra Nevada, North California, on the 12th October, 1870, I met with a small party of Digger Indians, consisting of four or five squaws and two men, all half naked, their dirty copper-coloured legs, arms, and breasts being devoid of clothing; and their low, retreating foreheads, with the hair growing nearly down to their eyes, gave them a peculiarly ape-like appearance. They were collecting their winter store of acorns, a large heap of which lay not far from their camp fire. Like all, or most of the Indian tribes I have seen, the hair is worn long. I noticed one of the squaws of this small band had cut her hair short, and the head appeared to be smeared over with tar. On my arrival at the ranch of Mr. Hutchins, the first settler in the valley, I inquired the meaning of the Indian's head being so treated, and was informed by him, and afterwards confirmed by Mr. Cunningham, who had been a long time an Indian agent in that locality, that what I saw was the Digger Indian's sign of mourning for the dead. According to my informant, when a Digger Indian dies, his body is burnt, and his nearest relative collects the ashes, which are then mixed with the thick resinous gum from a pine tree. The hair of the mourner is cut short and the head smeared over with the above preparation, which is allowed to remain till it is gradually worn away. This party had come down from Mono Lake to gather acorns for winter supply. They were repulsively hideous in appearance, and I should think as low a type of the human race as could be met with in any country.

T. R. CLAPHAM.

Austwick Hall, Clapham, Lancaster.

Jan. 5, 1874.

WHAT AM I? *A popular introduction to mental philosophy and psychology.* By EDWARD W. COX, Serjeant-at-Law. Vol. II. *The mechanism in action.* London: Longman and Co., 1874.

WE entered at some length into the merits of this work in a former number of this Journal,* when reviewing Vol. I. The remarks which we then made as to the general character of the book, appear to us to be fully applicable to the present volume, which is of the same high interest to all students of psychology and mental philosophy, as was its predecessor, and in which the subjects treated on in the former volume, are carefully followed up. In the preface to the present volume the author reverts to the length of time during which he has been devoted to the subjects embraced by his work, which formed the

* *Vide ante* "Journal of the Anthropological Institute," vol. iii, p. 123.

topic of a lecture delivered by him before a scientific society forty-two years ago. This fact will add much to the value of his opinions, and give strong additional claim to a careful consideration of the theories which he has advanced.

In the introductory chapter of the present volume, he explains certain passages in the former volume which friendly critics have asserted to be not quite intelligible to them, and also answers some objections made by critics whom he deems to be unfriendly. The subjects of the intelligent motive force, the conditions of existence, and the mechanism in health, are embraced by the second, third, and fourth chapters. Those which follow on sleep and dreaming, and their phenomena, will be read with peculiar interest, and some of the facts here recorded are worthy of deep consideration.

"An ingenious theory was broached by Lord Brougham, that dream did not exist in actual sleep, but only during the instant of semi-consciousness between the condition of sleep and the condition of being awake; and he illustrated it by an instance that had occurred to himself. While upon the judgment seat, and taking note of the argument of counsel, he fell into a doze, during which he was the actor in a dream, whose events would have occupied many days, the time seeming like many days to his mental consciousness. Waking with a start, he found that the speaker had not completed the sentence he was uttering when the doze began, and the ink that had written the last words was not yet dry upon his own note-book. From this he argued the dream occurs only in the act of falling asleep, not in the sleep itself." (Pp. 45, 46.) Serjeant Cox, however, proceeds to point out the fallacy of the argument. The extent to which the mental faculties are exerted during dreaming, is described by our author, and the process of dream accurately traced. The chapter "of some of the phenomena of sleep and dream" is one of peculiar interest. Well authenticated facts in relation to this subject are cited, while those of delirium and insanity are touched upon. Mr. Serjeant Cox remarks here that, "The really unsettled state of opinion, even among experts, proves conclusively the absence of that positive knowledge, which can only be obtained from a vast collection of facts." (P. 107.) And he adverts to "the conflict of opinion in relation to insanity, given by experts in the witness-box when sanity is in question. No two are found to agree in their definitions of insanity. They are in direct conflict as to the acts that indicate insanity." *Ibid.* What one pronounces to be a proof of insanity another regards as a no less conclusive proof of sanity! Indeed, "according to the one sort of doctors no one could be proved to be sane; according to the other, it would be impossible to prove any man to be mad." (P. 108.)

"Natural somnambulism" is a topic of deep interest to the generality, and is fully and ably discussed in the work before us, and several well attested cases are detailed to illustrate the subject. "Artificial somnambulism," how it is produced, and its peculiar phenomena, are also treated upon. Dr. Carpenter's theory of "unconscious cerebration" is acutely discussed. And the writer's own

theories with respect to "psychic force" are developed and explained in the concluding chapters of his work, adducing authenticated accounts of experiments tried, and winding up with an able summary of his argument.

On the whole this volume, as well as its predecessor, is of great value, and is well deserving of perusal by every student of anthropology, especially in the highest departments of the science; while to the general reader it will be found to be full of interest, as well as fraught with instruction throughout.

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